

Anti-Asian racism and public health

Edited by

Aggie J. Yellow Horse, Anne Saw, Lan N. Đoàn
and Gilbert C. Gee

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Anti-Asian racism and public health

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Learning to love ourselves again: Organizing Filipinx/a/o scholar-activists as antiracist public health praxis

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A critical component for health equity lies in the inclusion of structurally excluded voices, such as Filipina/x/o Americans (FilAms). Because filam invisibility is normalized, denaturalizing these conditions requires reimagining power relations regarding whose experiences are documented, whose perspectives are legitimized, and whose strategies are supported. In this community case study, we describe our efforts to organize a multidisciplinary, multigenerational, community-driven collaboration for FilAm community wellness. Catalyzed by the disproportionate burden of deaths among FilAm healthcare workers at the onset of the COVID-19 pandemic and the accompanying silence from mainstream public health leaders, we formed the Filipinx/a/o Community Health Association (FilCHA). FilCHA is a counterspace where students, faculty, clinicians, and community leaders across the nation could collectively organize to resist our erasure. By building a virtual, intellectual community that centers our voices, FilCHA shifts power through partnerships in which people who directly experience the conditions that cause inequities have leadership roles and avenues to share their perspectives. We used Pinayism to guide our study of FilCHA, not just for the current crisis State-side, but through a multigenerational, transnational understanding of what knowledges have been taken from us and our ancestors. By naming our collective pain, building a counterspace for love of the community, and generating reflections for our communities, we work toward shared liberation. Harnessing the collective power of researchers as truth seekers and organizers

as community builders in affirming spaces for holistic community wellbeing is love in action. This moment demands that we explicitly name love as essential to antiracist public health praxis.

KEYWORDS

Pinayism, racism and antiracism, counterspaces, critical race theory, health equity, Filipino, Public Health Critical Race Praxis, community organizing & grassroots development

Introduction

“They say some stories need to wait to be told
But I need a way to unfold
All of the weight of the people before me
Who never got chances to speak from they soul”
–Ruby Ibarra, “Skies”

A critical component for health equity lies in the inclusion of structurally excluded voices, such as Filipinx/a/o Americans¹ (FilAms) (1). Because FilAm invisibility is normalized, denaturalizing these conditions requires reimagining power relations regarding whose experiences are documented, whose perspectives are legitimized, and whose strategies are supported (2–4). To spark this reimagination, we begin with a reminder from Pinay rapper Ruby Ibarra of the multigenerational burden generated from the silencing of FilAm stories.

In this community case study, we describe our efforts to organize a multidisciplinary, multigenerational, community-driven collaboration for FilAm community health. Catalyzed by the disproportionate burden of deaths among FilAm healthcare workers at the onset of the COVID-19 pandemic and the accompanying silence from mainstream public health leaders, we formed the Filipinx/a/o Community Health Association (FilCHA). FilCHA is a national public health organization dedicated to advancing health equity, justice, and wellbeing in the Filipinx/a/o community through community-driven, collaborative, and data-informed approaches.

FilCHA operates as a counterspace where students, faculty, clinicians, and community leaders collectively organize to resist our erasure, abolish oppressive structures, and promote our wellness. Wellness is the harmonizing of mind, body, emotion and spirit that connects self and community actualization

(5, 6). By building a virtual, intellectual community that centers our voices, FilCHA shifts power toward people who directly experience the conditions that cause inequities have leadership roles and avenues to share their perspectives (7). We demonstrate the need for counterspaces as progressive values evolve in public health (8).

Background and rationale

Current conceptions of antiracist public health praxis may not fully account for FilAm complexities. Partially due to racialization as Asian American model minorities, FilAms are infrequently included in structural racism research (9). Population-level analyses often invisibilize FilAms by neglecting to systematically collect racial/ethnic data and by aggregating Asian American subgroups (10). Upon disaggregation, traditional health indicators (e.g., high English proficiency, baccalaureate degree attainment, household income) do not correlate with positive health outcomes for FilAms who are more likely hypertensive, diagnosed with cancer, and disproportionately represented in healthcare COVID-19 deaths (1). More nuanced analyses that contextualize FilAm health are needed.

One such infrequently examined area in health research is FilAms’ historical trauma, which stems from a turbulent colonial history with the United States (US) under the guise of benevolent assimilation (1, 11). The physical harm caused by the Philippine-American war resulted in the deaths of an estimated 20,000 Pilipino combatants and more than 200,000 civilians from combat and disease. As a means of cultural dispossession, generations of Pilipinos were then educated in a system “designed [for] the economic and political reality of American conquest” (12). The centrality of the US in early Pilipino migration and its evolution into a sophisticated system of federally-backed policies (e.g., the creation of the Overseas Employment Development Board in 1974) contribute to the continued economic reliance of the Philippines to export skilled labor out of the country (13), producing a global diaspora of displaced Pilipino families. As a survival strategy, FilAm families emphasized assimilation and acculturation. Across the US, even along the West and East coasts where most FilAms reside,

¹ We use “Pilipino” to refer to people with ancestral ties to the regions of Luzon, Visayas, and Mindanao residing in what is now known as the Republic of the Philippines. We use the term “Filipinx/a/o American” as a gender-inclusive term for people with Philippine ancestry residing in what is now known as the United States of America. We also incorporate “Pinay” as a political reference to the inseparability of U.S. imperialism on Filipinas in the United States.

FilAms may struggle to find community (2). Disrupting the multigenerational effects of this hegemonic miseducation and isolation requires reflection and action (14).

Anti-racist public health praxis

Praxis refers to the constant cycle of reflection and action with an underlying commitment to naming and transforming the world (14). This iterative approach is reflected in the National Campaign Against Racism which names racism, asks how it operates, and organizes and strategizes to dismantle it (15). Public Health Critical Race Praxis, an antiracist methodology for public health research and practice, focuses on contemporary patterns of racial relations, knowledge production, conceptualization and measurement, and action (16). Although each focus has shaped our health equity work, we center our case study on knowledge production, given the paucity of public health literature on FilAm knowledge producers.

Knowledge production

Scholars of color face barriers to knowledge production in traditional academic arenas which are rooted in colonialism, dehumanization, imperialism, unfreedom, and isolation (3, 17, 18). Amidst rigorous academic and professional programs, students of color are frequently exhausted by the barrage of overt and covert reminders of their otherness (19). They often taken on the burden of remediating these harmful racial climates through uncompensated labor (e.g., diversity committees, student organizing) (20). Similarly, Black, Indigenous, Latine,² and Asian American faculty have enumerated their own microaggressions, connecting these everyday assaults to poor health outcomes and the denial of tenure (21, 22). As such, racial campus climates have been detrimental for the FilAm faculty pipeline (23–25).

In addition to devaluing bodies of color, white supremacy also denigrates the knowledges of communities of color. One inconspicuous yet powerful form of epistemic oppression is epistemicide, which refers to the “killing of knowledge systems” through the erasure of non-Western ways of knowing (26). The historical theft and cooptation of non-Western knowledge systems has implications for today’s prospective knowledge makers (3, 27). That is, when students of color are deprived from knowing “how autonomous, resourceful, and abundant their

civilizations were prior to their relationship to colonialism... it becomes difficult to imagine a world beyond colonial domination” (28).

Yet imagination can illuminate alternative paths toward health equity (7). People who have been, historically and presently, structurally excluded from societal privilege possess the unique ontological and epistemic privilege to know, most intimately, the conditions of their oppression (29). Notwithstanding the increased attention to community-partnered participatory research as an approach to centering community voices in public health research (30), dismantling the dominant narratives that dehumanize FilAms “requires that the people experiencing/embodying realities of oppression retain narrative control—not the credentialed” (7). That is, the margins of society serve as a site of possibility and resistance for inhabitants (31)—not a brief stopover for “health equity tourists” who seek to co-opt recent streams of resources intended to address racial injustice (32). Indeed, health equity scholar Lisa Bowleg has argued for critical epistemologies as necessary to dismantle harmful narratives and radically change the underlying conditions that structure exclusion (33, 34).

How do alternate knowledges advance antiracist public health praxis? In this case study, we examine how the Filipina American feminist lens of Pinayism can explain the development of FilCHA by centering FilAm narratives.

Description of the case and methodological aspects

Action: Critical race counterspaces

We were compelled to create FilCHA as a counterspace because existing academic public health and governmental institutions had not sufficiently prioritized FilAm health on a national level in general, and COVID-19 disparities in particular. Counterspaces emerged as a concept at the intersection of critical race theory and education (35). Initially theorized as a response to negative racial campus climates, counterspaces provide a safe community for marginalized people to bring their full selves to collectively engage in meaning-making and transformative change (36, 37). Whether as formally enrolled students, curious researchers, or lifelong learners, we who identify as members of marginalized communities seek “spaces that would support [our] ideas, [our] research, and [our] commitments” (38).

Counterspaces offer respite from microaggressions, deficit framing, and erasure through affirming relationship building (35, 36). Socorro Morales, a Critical Race Feminista, defines counterspace as an intellectual place for transformation where marginalized people bring their full selves in their complexities to critically discuss their overlapping and distinct realities (37). That is, counterspaces disrupt the invisibility and isolation that

² We use “Latine” to refer to people with ancestral ties to the region now known as Latin America. Latine was introduced by queer, non-binary, and feminist Spanish speakers to push back against gender and heteronormative bias (<https://callmelatine.com/2020/12/14/an-open-letter-to-allies/>).

people of color face in academic settings, akin to the pedagogy of collegiality through which students “[learn] about community organizing while actually being a community” (39). Stretching beyond the confines of a single course, however, counterspaces also resemble an academic home, inviting multiple generations of interdisciplinary scholars and community members to vulnerably share raw ideas, critically yet caringly offer feedback, and generate novel insights rooted in the common struggle for justice (38).

Thus, one strategy for advancing health equity is to create counterspaces that facilitate knowledge production and promote actions toward holistic wellness. Producing knowledge in counterspaces enables us to reflect on our own epistemologies, analyze and critique oppressive systems that threaten our wellness, and act toward liberation (15, 40).

Reflection: Intersectionality via Pinayism

To guide our inquiry, we turned to Pinayism, which offers a unique, intersectional standpoint on the dynamic inclusion/exclusion of FilAm voices. Originating in the 1920's, “Pinay” refers to the political identity of Filipinas in the United States (41). Ethnic studies professor Allyson Tintiangco-Cubales (42) conceptualized Pinayism as feminist praxis, connecting Pinay stories at the global, local, and personal levels to reveal the complexities of intersectionality for transformative change. Just as feminism is not limited to females, Pinayism is not limited to Pinays. Rather, Pinayism centers the experiences of Pinays to generate a deeper understanding of local issues by framing oppression globally and facilitating individuals’ capacity to affect change (42). Thus, Pinayism aligns with recent calls to address contemporary public health crises by engaging in intersectional praxis (43).

As an individual and communal process of humanization, Pinayism offers a valuable perspective for deepening antiracist public health praxis. According to the decolonialist body of *Sikolohiyang Pilipino* (i.e., Filipino Psychology), colonialism ruptured *kapwa*, the Pilipino core value of unity with others, indicating a deep connection with and commitment to community (44–46). Pinayist scholars restore *kapwa* through a shared understanding of contemporary struggles through decolonial, feminist, and antiracist contexts (40). Critical *kapwa* pedagogy, a strategy for teaching FilAm students, builds on *kapwa* value as a pertinent approach for collective healing through humanization, wholeness, and decolonizing epistemologies (46). Other examples of scholarship related to community health include the colonial roots of chronic diseases in the FilAm community juxtaposed against the FilAm healthcare workforce (47); ethnic studies as community responsive wellness (5, 6); and antiracist mothering amidst the coronavirus pandemic (48).

Public health literature has yet to robustly engage Pinayism. Notably, scholar-activists Maglalang et al. (49) recently argued for infusing Asian American Studies into public health training to develop critical consciousness among future health educators and to enhance their capacity to address anti-Asian racism through practice. For example, Asian American Studies and feminist theory guided an empirical paper and revealed that family and economic considerations kept nurses in specific settings that increased COVID-19 exposure risk (50). However, explicit application of Pinayism to explain FilAm health inequities has yet to find its place within public health’s peer-reviewed journals.³

Even when informed by historical context, health disparities scholarship often frames communities of color by their deficits (33, 51). In contrast, Pinayism aligns more closely with desire-based research (2), “intent on depathologizing the experiences of dispossessed and disenfranchised communities” (52). To generate a more complete story, Pinayism encourages self-determination through the individual and communal process of acknowledging pain, showing love, and engaging in reflection toward community actualization and liberation, as summarized by the equation, $\text{pain} + \text{love} + \text{reflection} = \text{liberation}$ (40).

While initially articulating Pinayism as “ $\text{pain} + \text{love} = \text{growth}$,” Tintiangco-Cubales also described it as a fluid concept focused on revolutionary action, self-affirming conduct, and a self-determining system (42). In keeping with valuing the multiplicity of Pinay experiences and the fluidity of self-determination, the elements of the equation remain unbound by rigid definitions to be imposed onto others. Rather, the intention is for Pinayists to engage in “deep self-reflection as a means toward collective liberation” (i.e., $\text{pain} + \text{love} + \text{reflection} = \text{liberation}$) (40).

As Pinay scholar-activists engaged with FilAm studies as a means for healing (46), the first and second authors proposed applying the lens of Pinayism to reflect on our involvement with FilCHA. We leveraged the Pinayism equation as an analytical tool for decomposing the elements that contributed to FilCHA as a liberatory space. Conscious of the tendency for FilAms to avoid conflict rooted in the deeply valued concept of *pakikisama* (i.e., getting along with others) (44), we chose to name our pain. Furthermore, to counter the primarily positivist and deficit-oriented field of public health, we also reflected upon our actions as love for our community. Lastly, to acknowledge the sociopolitical implications of historical trauma on contemporary struggles for health equity (53), we reflected on our humanizing practices in the context of the ongoing struggle for collective liberation.

³ PubMed search for “Pinayism” produced 0 results. “Pinay” yielded 2 results that were not related to the author last name “Pinay”: one was a 2010 article on action research in reference to a Filipino Canadian domestic worker organization and the other was a 2021 reflection from a Pinay social worker that did not explicitly reference “Pinayism.”

For the Pinay “to name her scars... and to uncover its connections to her subjectivity” (54), both data and analytical lenses are grounded in Pinay experiences (48). We embrace the Critical Race Feminista concept of cultural intuition, which leverages both shared experiences and community memory to enhance our interpretation of data (55). Indeed positivist claims to objectivity are fundamentally inappropriate for feminist and intersectional epistemological analyses which posit that knowledge is socially constructed (33). Instead, rigor is evaluated by the logic used to link data to the stated propositions and addressing rival explanations for findings. Case studies on unusual cases emphasize departures from convention to reveal insights about the status quo (56). Similarly, examining the proposition that FilCHA serves as a counterspace reveals how mainstream systems of knowledge production in public health have hindered FilAm health research.

We drew on two forms of data collection to make sense of FilCHA’s development. We reviewed documentation (e.g., emails, agendas, internal documents, social media) that chronicled our milestones. Concurrently, we reflected together on our process as active members and/or co-founders, and thus participant-observers, to facilitate our meaning-making of what transpired. The authorship group for this commentary includes five members of the inaugural FilCHA board, including senior researchers and current students. In fact, the majority of authors are graduate students or recent alumni from programs in public health, medicine, and sociology. Although we all identify as FilAms, each author’s lens has been shaped by lived experiences in various regions of the US, tied to different familial contexts of migration.

Results

We summarize our findings through the Pinayism process of pain + love + reflection = liberation.

Pain: Invisibility reinforces inaction

The Pain experienced by the FilAm community during the pandemic is multifaceted and rooted in a long history of colonial violence dating back to the 16th century under Spanish rule. Since the late 1500’s, Spain, and subsequently the US from 1899 to 1946, exploited Philippine society, land, and people, uprooting connections to place, history, nature, spirit, ancestry, and community through various tools of colonialism, imperialism, and racism (57). As a result of this historical trauma, FilAms experience psychological and social hardships that ultimately manifest as health problems (1). Yet in pursuit of higher education to address these health problems, FilAm students often experience unrecognized marginalization, isolation from other FilAm students and mentors, siloed

TABLE 1 Manifestations of pain experienced by the Filipinx/a/o American community by ecological level.

Ecological level <i>Pain</i>	Further interdisciplinary readings on manifestations of <i>Pain</i>
Individual: Invisibility	Not being seen in America (59, 60) Exclusion from curriculum (61, 62) Few political leaders (63)
Interpersonal: Isolation	Difficulty finding other FilAms due to underrepresentation in academia (23, 25, 58)
Community: Ignorance	Epistemicide (i.e., “killing of knowledge systems”) in education (2), psychology (64), and public health (1)
Society: Inaction	Inaction on a structural level to address above issues through policy (63), the health care workforce (65), and clinical research (66)

This reading list is not intended to be exhaustive.

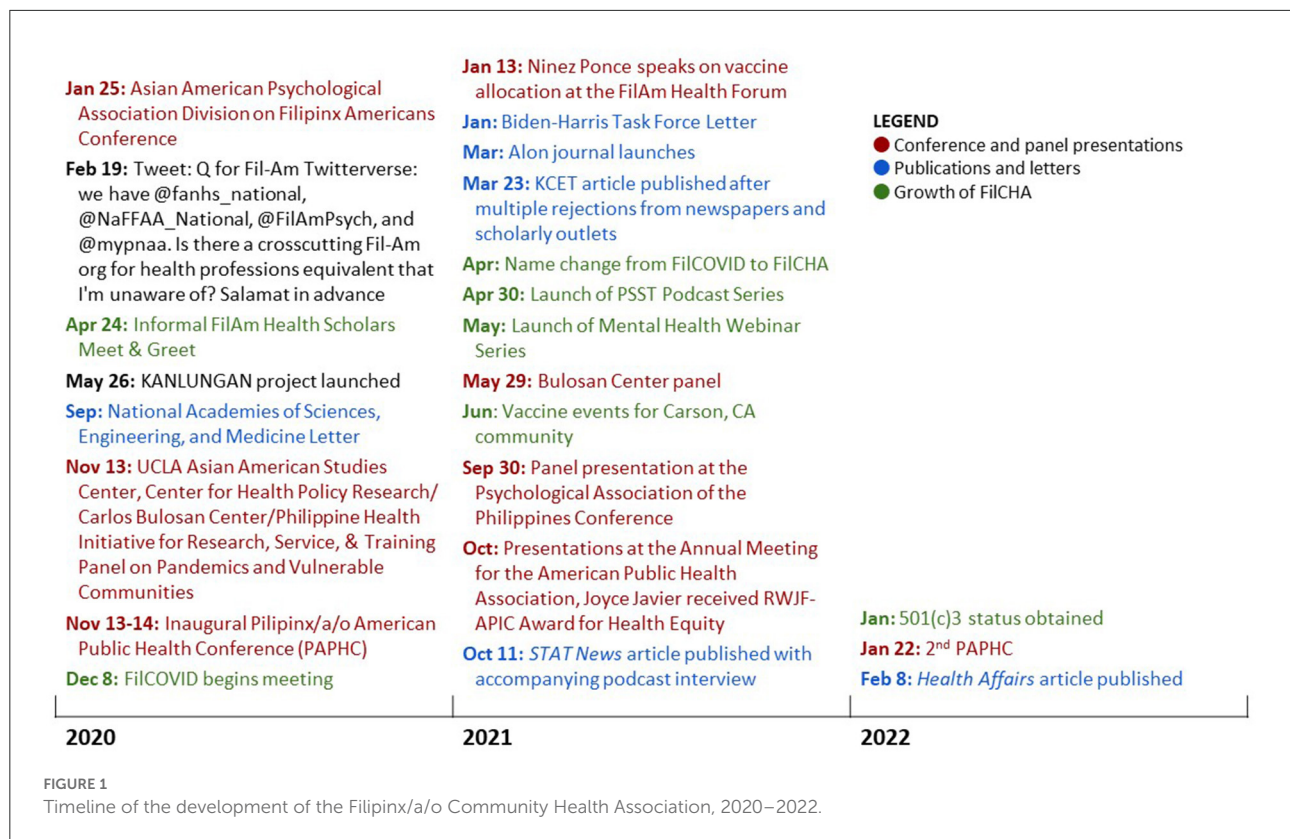
scholarship on FilAm issues which contribute to disciplinary ignorance, and institutional inaction to remedy said challenges (58). Ecologically, these harms further marginalization across individual, interpersonal, community, and societal levels. In Table 1, we highlight a non-exhaustive list of interdisciplinary publications that historicize examples of Pain experienced by the FilAm community. Omitting this context, which otherwise would inform why knowledge production remains a challenge, further perpetuates the epistemicide that thwarts attempts to alleviate the Pain.

The pandemic exacerbated the ongoing disinvestment in FilAm health on a national and global scale. Early on, we witnessed a disproportionate number of deaths among FilAm healthcare workers. Despite FilAms comprising 4% of registered nurses, they made up nearly 30% of COVID-related deaths, according to the National Nurses United, a statistic underscored by the poignant digital memorial KANLUNGAN, which was curated by the transnational anti-imperialist feminist organization, AF3IRM.⁴ Against the backdrop of America’s racial reckoning, anti-Asian hate crimes, and global exploitation of Filipino health care workers, the pandemic compounded the burdens of Pinay racial equity scholars (48). Acknowledging the multilayered pain inflicted on the FilAm community serves as the first step to adequately address the continued marginalization we have historically endured.

Love: Collaboration via counterspace

FilCHA’s origins preceded the pandemic. Drawing upon a wealth of shared community resources [e.g., aspirational, resistant, navigational, social forms of community cultural

⁴ <https://www.kanlungan.net/>



wealth (67)], FilAms previously established local grassroots organizations and professional associations in medicine, nursing, psychology, education, and ethnic studies to reimagine ways to heal the bodies, minds, and souls of our community (40). In public health, however, there remained a void that pan-Asian organizations had not filled (68). Longing for an interprofessional space that centered our epistemologies in the discourse, we organized toward our collective liberation and healing in public health, as illustrated in the timeline in Figure 1 (40).

As the COVID-19 pandemic accelerated over the early months, high-profile media articles calling attention to the burden on FilAm nurses⁵ brought urgency and prompted FilAm public health scholars to connect and organize virtually. A shared recognition of the invisibility of FilAm COVID-19 disparities in cases and deaths culminated with a September 2020 letter to the National Academies of Sciences, Engineering, and Medicine. Addressing the COVID-19 Vaccine Allocation Framework, the letter served as an act of resistance by critiquing the context of ongoing FilAm health inequities. In December

2020, signatories of the letter gathered to form an *ad hoc* group, the Filipino/a/o COVID-19 Resource and Response Team (FilCOVID), largely inspired by the National Pacific Islander COVID-19 Response Team (69). Initially, we sought to educate and recommend policies for FilAm COVID-19 equity, yet our mission transformed into engaging in decolonization, self-determination, humanization, and relationship building within public health.

Through weekly Zoom meetings, inviting colleagues from other networks, and a growing social media presence, FilCOVID rapidly grew in size and influence. FilCOVID evolved into FilCHA, a transdisciplinary, interprofessional, and intergenerational organization consisting of over 100 members. Our members have diverse academic trainings and backgrounds in ethnic studies, history, sociology, anthropology, political science, epidemiology, policy, economics, social work, psychology, health services research, community health sciences, and medicine. FilCHA members include students, community leaders and organizers, researchers, clinicians and community-based direct service providers, faculty, and early career professionals, with many of our members serving in multiple roles. Figure 2A illustrates and quantifies the diversity in the roles of our members: out of 36 students, 8 are also researchers; out of 26 clinicians, 13 are also community leaders; out of 12 faculty members, 4 are also community leaders and organizers. As a virtual, intellectual space, FilCHA has become

5 <https://www.statnews.com/2020/04/28/coronavirus-taking-outsized-toll-on-filipino-american-nurses/>, <https://www.latimes.com/california/story/2020-07-21/filipino-americans-dying-covid>, <https://www.nbcnews.com/news/asian-america/largest-share-migrant-nurses-entire-u-s-filipino-community-hit-n1237327>

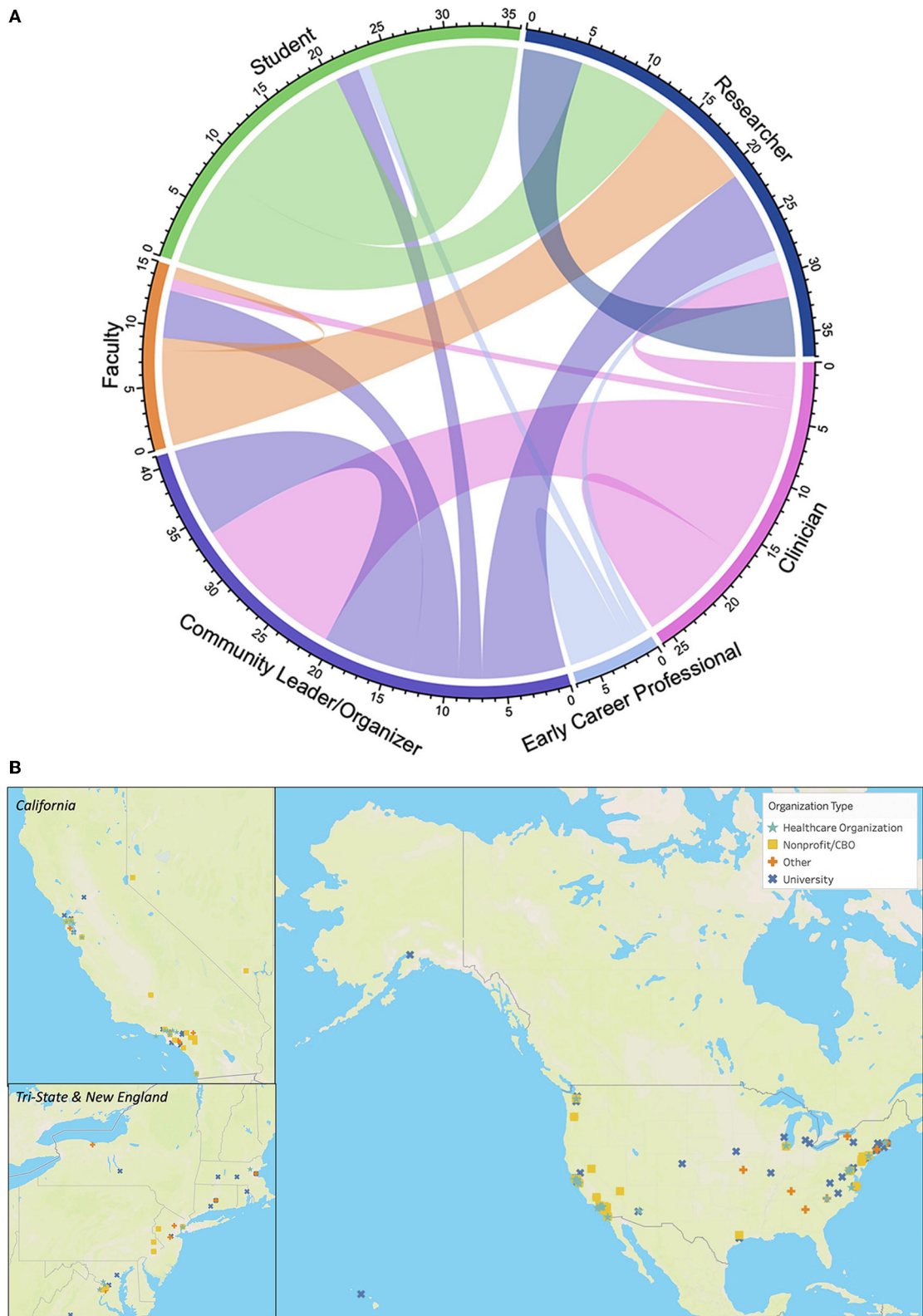


FIGURE 2
Diversity and geographic reach of the Filipinx/a/o Community Health Association network. **(A)** Composition of Filipinx/a/o Community Health Association membership illustrating diversity and overlapping of roles. Chords that connect to the same role indicate members who serve one
(Continued)

FIGURE 2

role. Chords that connect from one role to another represent members who serve in both roles. Clinician is inclusive of community-based direct service providers. Generated with circlize package in R (70). (B) Geographic distribution of organizations from more than 600 individuals who signed the January 2021 policy letter to the Biden-Harris Health Equity Task Force regarding COVID-19 and the Filipino/a/o American community.

a hub for FilAm health equity scholar-activists where our Filipino/a/o communities' epistemologies can be centered in our discussions and organizing.

The influential impact and broad reach of our members enabled us to compile more than 600 signatures within a few days for a January 2021 policy letter to the Biden-Harris Health Equity Task Force regarding COVID-19 and the FilAm community.⁶ Illustrating the geographic spread of the signatories, Figure 2B displays the geographic location of the signatories' organization affiliations. The overwhelming response across multiple sectors (e.g., non-profit, academic, professional) provided us the momentum and validation needed to organize for health equity. The swift mobilization of our community emerged because of the combination of love, care, commitment, knowledge, responsibility, respect, and trust (71). The letter reached across different networks, sharing a recognition of pain but the power of the counternarrative. In a time of crisis, the letter offered context and space to understand, challenge, and transform established belief systems (72–74). Further, the letter provided new possibilities and connections for those on the margins.

Recognizing that COVID illustrated the broader issue of FilAm invisibility in public health discourse and practice, members clarified its mission. FilCOVID transitioned to the Filipino/a/o Community Health Association (FilCHA), a collective non-profit space we created to honor our ancestors, share hope and joy, and individually and collectively heal by identifying holistic wellness through self-determination. We adopted a broader vision to ensure visibility, accurate data, and equitable allocation of resources for the Filipino/a/o community, empowering new and existing movements to create sustainable healing.

By combining our interprofessional, multidisciplinary membership with a digital presence, FilCHA inhabits a unique space in the FilAm community. We are not directly affiliated with a specific academic institution. Rather, we pair the strengths of academic perspectives with a community focus and partner with other community-based organizations. This allows us to coordinate and build *kapwa* with each other nationally and outside of academic institutions that have not traditionally valued the importance of critical cultural production of engaged scholarship that expresses our own perspectives in public health. Benefiting from elders' expertise with incorporation,

we formalized the national organization by acquiring 501(c)3 non-profit designation in January 2022.

Reflection: Producing knowledge

To overcome the erasure of FilAm knowledge in health equity discourse, we collectively redefined, restored and redistributed power by gathering and analyzing our own knowledge to raise visibility within the field of public health and the broader FilAm community. Table 2 lists knowledge produced by FilCHA members: policy letters, publications, presentations, and podcast episodes. Upon seeing the continued omission of FilAms from COVID-19 equity discussions, we collaboratively drafted policy letters in hopes of addressing structural change in the areas of vaccine allocation, data collection and disaggregation, and classification as underrepresented minorities, including our letter to the Biden-Harris Health Equity Task Force.

In facilitating research on and with FilAms, FilCHA members published at least 39 articles since December 2020. Many of the publications emphasized the health and social needs of FilAms. Our multidisciplinary collaboration led to an article on colonialism and racism on FilAm health inequities in the *Health Affairs* special issue on racism and health (1). The infrequent integration of sociological and historical context, chronic disease, mental health, and policy relevance generated new research questions for future studies with the potential to tangibly improve FilAm health. Additionally, we developed community resources that have been fundamental for disseminating FilAm knowledge and strengthening future FilAm power relations: a publicly viewable bibliography of FilAm health articles and an email distribution list for members to share funding opportunities, policy updates, community-defined healing services, and study participant recruitment. An online repository for FilAm oral histories and other datasets is under development.

Leveraging extensive networks built over decades of organizing, we also engaged the broader FilAm community to cocreate knowledge through a funded podcast series, webinars, and presentations. We preserved experiences of FilAms at various intersections of oppression while highlighting strategies for healing. FilCHA decentered positivist approaches to research by uplifting *kuwentuhan* (talking story) through

⁶ <http://tiny.cc/filcovidletter>

TABLE 2 Knowledge produced by Filipinx/a/o Community Health Association members, December 2020–May 2022.

Policy letters

1. Letter to the National Academies of Sciences, Engineering, and Medicine (September 2020)
2. Letter to the Biden-Harris Health Equity Task Force (January 2021)

Publications

1. A rapid assessment of the impact of COVID-19 on Asian Americans: cross-sectional survey study
2. Access and utilization of mental health services among Pacific Islanders.
3. Addressing the interlocking impact of colonialism and racism on Filipinx/a/o American health inequities
4. Asian, Latinx, or Multiracial? Assessing Filipinxs' Health Conditions and Outcomes by Aggregate Ethnic Category
5. Between Women of Color: The New Social Organization of Reproductive Labor
6. Capturing Racial/Ethnic Diversity in Population-Based Surveys: Data Disaggregation of Health Data for Asian American, Native Hawaiian, and Pacific Islanders (AANHPIs)
7. Characterizing Awareness of Pre-Exposure Prophylaxis for HIV Prevention in Manila and Cebu, Philippines: Web-Based Survey of Filipino Cisgender Men Who Have Sex With Men
8. Characterizing Problematic Drug Use Among Transgender Women and Cisgender Men During the Emerging HIV Crisis in the Philippines: Implications for Policy Research
9. Colonial mentality and psychological flexibility among Filipinx Americans
10. Condom Use and Social Capital Among Filipinx Transgender Women and Cisgender Men Who Have Sex with Men (Trans-WSM and Cis-MSM): a Structural Equation Modeling
11. Considerations of Racism and Data Equity Among Asian Americans, Native Hawaiians, and Pacific Islanders in the Context of COVID-19.
12. Creating a Culture of Mental Health in Filipino Immigrant Communities through Community Partnerships
13. Creating a shared definition of adolescent mental health in the Filipino American community: A comparative focus group analysis.
14. Deferred depression? Mediation analysis of Deferred Action for Childhood Arrivals and immigration enforcement among Undocumented Asian and Pacific Islander students
15. Disaggregation for Health Equity: Shedding Light on COVID-19's Impact on the Filipinx Community
16. Doctoral Students as Agents for Change: Shaping Our Public Health Training Environment
17. Evaluating an Evidence-Based Parenting Intervention Among Filipino Parents: Protocol for a Pilot Randomized Controlled Trial.
18. Evaluating Translation of HIV-Related Legal Protections Into Practice: A Qualitative Assessment Among HIV-Positive Gay, Bisexual, and Other Men Who Have Sex With Men in Manila, Philippines
19. Executive summary of the 2020 clinical practice guidelines for the management of hypertension in the Philippines
20. Filipinx American Studies: Reckoning, Reclamation, Transformation
21. Frank Mancao's "Pinoy Image": Photography, Masculinity, and Respectability in Depression-Era California
22. From imperialism to inpatient care: Work differences of Filipino and White registered nurses in the United States and implications for COVID-19 through an intersectional lens
23. Health disparities for Filipinxs in health care are disguised by data aggregation
24. Health Equity and Enrollment in Preventive Parenting Programs: A Qualitative Study of Filipino Parents
25. Heterogeneity in migrant health selection: The role of immigrant visas
26. Heterogeneity in the association of citizenship status on self-rated health among Asians in California
27. Internalized transphobia and mental health among transgender adults: A nationwide cross-sectional survey in South Korea
28. Intimate partner violence and HIV testing in Filipino women: analysis of the 2017 Philippine National Demographic and Health Survey
29. Life Satisfaction and Social and Emotional Support Among Asian American Older Adults.
30. Lost on the frontline, and lost in the data: COVID-19 deaths among Filipinx healthcare workers in the United States
31. Recasting the immigrant health paradox through intersections of legal status and race
32. Responsive Medical Providers and Recent HIV Medical Services Engagement Among Transgender Women and Cisgender Men Who Have Sex With Men in the Philippines
33. The Association Between Moderate and Serious Mental Health Distress and General Health Services Utilization Among Chinese, Filipino, Japanese, Korean, and Vietnamese Adults in California.
34. The COVID-19 pandemic and pediatric mental health: advocating for improved access and recognition
35. The Impact of Structural Inequities on Older Asian Americans During COVID-19
36. Transgender-specific developmental milestones and associated experiences of violence, discrimination, and stigma among Filipinx transgender women who are sexually active with men

(Continued)

TABLE 2 Continued

37. Transpacific Rizalistas: Portrait Photography and the Filipino Becoming-Subject
 38. US Health Care Relies on Filipinx While Ignoring Their Health Needs: Disguised Disparities and the COVID-19 Pandemic
 39. Using structural equation modeling to characterize multilevel socioecological predictors and mediators of condom use among transgender women and cisgender men who have sex with men in the Philippines
- Presentations, panels, webinars**
1. A Filipinx physician on the health disparities disguised by data (Stat News First Opinion Podcast)
 2. Enduring Impact of Colonialism on Health Inequities in the US (A Health Podysey)
 3. Examine the relationships between Fil Am identity, COVID-19 stressors, and mental health outcomes
 4. How can CHW address disparities and management of DM, HTN, and asthma in the Asian community (APHA 2021)
 5. Lost in the Frontlines, Lost in the Data, and Lost in the Policy Priorities (Filipino American Health Forum on COVID-19)
 6. “Missing” context, “missing” data: An ecosocial assessment of the disproportionate COVID-19 burden among filipina/x/os (APHA 2021)
 7. No Health without Mental Health
 8. Path to Public Health Panel Presentation at the 2022 Pilipinx American Public Health Conference
 9. Pinay Perspectives on the Lakas Mentorship Program: Reflecting on our Power to Heal, Care, and Resist (2021 Bulosan Center for Filipinx Studies Research Conference)
 10. Power of Positive Parenting in Filipino Families: Helping Our Youth Thrive During COVID-19 (Philippine Embassy)
 11. Presentation at the 2021 Council of Young Filipinx Americans in Medicine Conference
 12. Promoting multidisciplinary and international collaboration to address mental health (2021 Psychological Association of the Philippines Conference)
 13. Public Health Research and Our Community: The Filipinx/a/o Covid-19 Response Team Research and Data-Disaggregation Subcommittee (2021 Bulosan Center for Filipinx Studies Research Conference)
 14. Racism & Health Virtual Symposium (Health Affairs Briefing)
 15. Reclaiming the full spectrum of Filipinx/a/o sexual and reproductive health care (2021 Bulosan Center for Filipinx Studies Research Conference)
 16. Stop Asian Hate: The Mental Health Impact of Racial Discrimination Among Asian Pacific Islander Young and Emerging Adults during COVID-19 (AcademyHealth Annual Research Meeting 2021)
 17. Webinar series on self-care and wellbeing
 18. White House Initiative on Asian Americans, Native Hawaiians, and Pacific Islanders Virtual Celebration for Filipino American History Month 2021
- Podcast episodes**
1. Pilot episode
 2. COVID-19 vaccine and general information
 3. Asian American Hate Crimes Effects on the Filipinx/a/o Community
 4. Understanding of Mental Health: Self-Care and Community Care during COVID-19
 5. Filipinx/a/o Healthcare Workers COVID-19 Experiences
 6. COVID-19 Impacts on the Filipinx/a/o LGBTQAI+ Community
 7. Importance of Data, Data Disaggregation, and Research during COVID-19
 8. Addressing COVID-19 Misinformation in the Filipinx/a/o Community
 9. Parenting, Family Dynamics, and School Roll-Out during COVID-19
 10. COVID-19 Effects on Filipinx/a/o Adolescents and Young Adults
 11. COVID-19 Effects on Filipinx/a/o Biracial and Multiracial Community
 12. Road to Recovery in All Forms during COVID-19
 13. Immigration and Resources for Mixed Status/Undocumented Filipinx/a/o during COVID-19
 14. Community Organizing during COVID-19 (West Coast/Midwest/East Coast)

Podcast episodes can be accessed at: <https://www.filcha.org/podcast-archives>.

our 14-episode podcast series, titled “The Pilipinx/a/o Sharing Stories Together (PSST) Podcast.”⁷ PSST alludes to the sound that FilAms often make to get someone’s attention. The podcast featured perspectives from clinicians, researchers,

community organizers, creatives, youth, parents, undocumented immigrants, LGBTQI+, and multiracial FilAms. The podcast gained traction on social media platforms⁸; on Twitter,

⁷ <https://www.filcha.org/podcast-archives>

⁸ https://twitter.com/filxao_cha, https://instagram.com/filxao_cha, <https://www.facebook.com/FilxaoCHA>

FilCHA's largest social media platform, 191 tweets about the podcast amassed over 204,600 impressions. Similarly, on Facebook 99 posts about the podcast reached 16,437 individuals. Our mental health webinars incorporated activities such as karaoke, cooking, and Zumba, reaching more than 2,000 individuals. Through more than a dozen presentations, we shared our ideas with diverse audiences including public health professionals, FilAm youth, and mental health professionals in the Philippines.

These collective successes were built upon the intellectual and emotional labor of prior rejections as individuals. One of the earliest collaborations started in May 2020. After connecting on Twitter, two FilCHA co-founders decided to draft an op-ed article on data disaggregation for COVID-19 data, centering their argument on the growing number of FilAm healthcare worker deaths. Days later, AF3IRM launched the KANLUNGAN tribute website and the UCLA Center for Health Policy Research launched the COVID-19 Race/Ethnicity and Risk Factors Dashboard. Enhanced with new data sources and a senior third author, the op-ed was submitted. Month after month, while the deaths of FilAm healthcare workers kept climbing, news outlets and scholarly journals rejected the op-ed. Facilitated through the senior author's media recognition, the article finally found its home accompanying KCET's Power & Health documentary⁹ in March 2021.

While this persistence may be admirable, it is also exhausting. In various committee meetings, several FilCHA members expressed similar frustrations over rejected publications, grant applications, and panel presentations that centered on FilAms. An established FilAm researcher shared that grant reviewers commented that studies that focused only on FilAms were not warranted. Rather than processing these setbacks individually, FilCHA created a space for being vulnerable, exposing common struggles, and sustaining each other despite setbacks. This unrecognized labor takes a toll. Similarly burdened, counterspaces have "nurtured what would become a growing lineage of U.S. Filipino education scholar-activists" (38). We extend this idea toward growing a lineage of U.S. FilAm scholar-activists for health equity.

Liberation: Decolonization, humanization, self-determination, and relationship-building

Through FilCHA as a counterspace, we have built pathways toward collective healing. Transforming conditions to reach health equity requires continuous collective commitment to

liberation from all oppression. Indeed, as a community-driven effort, sustaining counterspaces depends on individual and communal praxis. FilCHA engages in decolonization, humanization, self-determination, and relationship-building practices (40).

Acknowledging the legacies of colonialism on FilAm health within public health literature is just the first step toward decolonization. FilCHA seeks to advance self-determination and healing with other peoples who continue to be impacted by colonial legacies. For example, our contribution to the *Health Affairs* special issue on racism and health has sparked cross-racial conversations regarding anticolonialism (1). Alongside American Indian/Alaska Native, Native Hawaiian and Pacific Islander, and other Asian American scholars, our members have advocated for visibility through disaggregated data (10, 75, 76). This current paper attempts to bridge ethnic studies, critical race theory in education, and public health praxis. To transform public health, we continue to invest in cultivating health social movements, learning critical theories, decolonizing methods, and health promoting practices from antiracist scholars and community organizers across disciplines.

Driven by our shared humanity, we prioritize telling the stories of FilAms within and beyond FilCHA. The podcast was one of several ways we brought attention to the nuances of FilAm experiences (e.g., multiracial, undocumented, queer). We also spotlighted FilCHA members on social media platforms, highlighting reasons for joining, relevant projects, and experience with the COVID-19 vaccine. Additionally, in the scholarship we produced, we often referenced the KANLUNGAN tribute website to the more than 200 healthcare workers of Philippine descent who passed away from COVID-19. All of this is intentionally in contrast to the dominant epidemiological representations of people of color who are often presented as statistics devoid of context (77). As members of the FilAm community, we embody our ancestors' resistance and struggle, sharing experiences with those whose health outcomes we prioritize.

Moreover, FilCHA facilitates our self-determination by setting our own agenda and mobilizing our vast network to increase our impact. We share the common goal to serve, address, and answer FilAm community health and wellbeing needs. Covering the areas of research, policy, outreach, and mental health, FilCHA committees provide the infrastructure for supporting member-driven initiatives. Current collaborations include this manuscript, participation in the #WeCanDoThis campaign, online "Zoomba" workshop for wellbeing, administratively advocating for equitable health policies at the federal level, and intentionally mentoring rising public health leaders.

Finally, the relational culture within FilCHA signifies the ongoing reclamation of kapwa. In contrast to elitism and individualism, we welcome and support members at whichever stage they are in their journey. Decisions are consensus-driven,

⁹ <https://www.kcet.org/shows/power-health/disaggregation-for-health-equity-shedding-light-on-covid-19s-impact-on-the-filipinx-community>

rather than defaulting to those with seniority or professional roles conventionally seen as most prestigious (e.g., physician). Though many members are credentialed, respect and familiarity are extended through the honorifics of “Ate,” “Tita,” or “Ninang” (older sister, auntie, or godmother) rather than “Doctor.” Having survived marginalization in their own careers, elders share their wisdom, networks, and resources. Opportunities for skill development (e.g., speaking at conferences, coauthoring manuscripts, and leading projects) are shared during virtual meetings and through online collaboration tools (e.g., Google Groups, Slack, and social media). Challenging dominant values that breed competition, FilCHA seeks to reunite our fellow FilAms by seeing ourselves in each other.

Discussion

“There is power in seeing each other. ... in hearing each other. ... in speaking to each other. There is power in ‘us.’ There is power because they cannot fathom what we can do together.” –Cee Carter and Korina M. Jocson (78).

The development of FilCHA demonstrates how community-driven efforts disrupt epistemicide, an overlooked expression of structural racism against Asian Americans. Through disciplinary self-critique, our case study advances public health praxis by articulating the need for counterspaces to facilitate self-determined knowledge production. Further, by leveraging Pinayism as our analytical tool, we exhibited how epistemic privilege aids our collective understanding of the complex barriers to health equity. We encourage a sincere love for the people toward a more humanizing public health.

As people affected by the legacy of colonialism, we, as public health scholar-activists, sought to recover our significance and “learn to love ourselves again” (79, 80). By naming our collective pain, building a counterspace for love of the community, and generating reflections for our communities, we work toward shared liberation. Analyzing the development of FilCHA through the lens of Pinayism guided our approach to understand our actions, not just in the current crisis State-side, but through a multigenerational, transnational understanding of what knowledges have been taken from us and our ancestors (27). Digital artifacts, such as meeting minutes, generated within counterspaces can help to illuminate differences from the normalized processes of knowledge production. Additionally, participant observation embraces reflexivity, acknowledges the situatedness of the researcher within the research, and promotes cultural intuition (55, 81). Counterspaces illuminate the possibilities for antiracist public health praxis by placing people of color at the center of knowledge production and case study as a method offers another tool for understanding the complexity of racism and antiracist public health praxis (56).

The racialization of FilAms as colonized “model minorities” without unmet health needs sparked the development of

FilCHA. As an example of preparation meeting opportunity, the coronavirus pandemic catalyzed a critical mass of FilAm scholars and community leaders to engage in online conversations around the disproportionate burden among the FilAm community and their roots in colonial legacies. This ignited our agency and creativity to not only make meaning of our community’s unequal exposure to COVID-19 but also comprehend the limited response from conventional public health organizations.

Exclusion from both mainstream public health efforts and conventional “minority health” initiatives to curb COVID-19 spurred us to act. FilCHA was birthed by connecting existing networks of FilAm community organizations and Asian American public health entities through our shared struggle to achieve holistic community wellbeing. In broader discussions of racial health equity, attention to FilAm health tends to waver between the omission altogether of Asian Americans from population health analyses, positioning as white-adjacent model minorities to denigrate other communities of color, and, less frequently, inclusion within disaggregated Asian American data (1). Indeed, education scholars have argued that the incessant need for FilAms to develop counterspaces is perpetuated by insidious, systemic underfunding and inequitable decision-making structures (2).

Liberation fundamentally requires an ongoing commitment to transform the spaces we occupy (82). Abolishing oppressive systems must be motivated by emotion (83). Love is enacted by sustaining each other and sharing the collective responsibility (71, 84). Efforts to address anti-Asian hate should also seek to cultivate love.

Contradictions

As a globally displaced diaspora, FilAms are undeniably complicit as settlers on stolen land (85). As we prioritize consciousness raising to highlight FilAm stories of resistance and struggle, how FilCHA relates to Indigenous people from the Philippines has yet to be determined.¹⁰ As the organization and its’ membership grow, FilCHA aims to intentionally wrestle with the incommensurability of FilAm health and Indigenous sovereignty (85).

Through our ongoing process of (un)learning, we benefit from the intellectual work advanced by Indigenous scholar-activists [e.g., decolonizing methodologies (3), historical trauma (53, 86, 87), loss of culture (88), colonial schooling (89)]. We encourage anticolonial stances in public health literature in hopes that increased attention to colonialism as a determinant of health will yield more collective power and resources to disrupt it.

¹⁰ <https://www.ikatvoices.com/>

As a precursor to unsettling stolen land, we assert that we must learn to love ourselves, our people, and our culture, to cultivate the desire and means to reunite with our homeland. Notably, the exodus continues; 46,000 Pilipinos immigrated to the U.S. in 2018 (90). By engaging

in self-determined antiracist praxis, we aim to make visible the mechanisms through which white supremacy and U.S. imperialism have and continue to maintain the conditions that separate FilAms from our wholeness and our potential for collective liberation.

TABLE 3 Lessons learned and recommendations for promoting kapwa.

Lesson learned	What happened with FilCHA	Recommendations
<p>Find each other. Humanization necessitates the destruction of the hierarchies and categories that separate people from recognizing each other's sacred humanity.</p>	<p>Our inner kapwa led us to find each other and build power in community toward liberation. This also facilitated a flattened hierarchy and consensus-driven decision-making. The stay-at-home orders pushed community organizers to pivot to online spaces, increasing visibility beyond the local community and access despite geographic spread.</p> <p>Through well-connected members, we came together as a network. Trusted colleagues helped to identify funding opportunities that facilitated crucial operational support and provided honoraria for podcast guests from the community. Motivated by kapwa, we sought to uplift what already existed, not to compete.</p>	<p>Identify community cultural wealth within own networks.</p> <p>Identify the responsibility, relevance, and relationships with community.</p> <p>State and federal organizations, foundations, and local health departments should increase the pipeline of structurally excluded communities into academic and research careers.</p> <p>State and federal organizations, foundations, and local health departments should be evaluated on the funding opportunities they provide to match the diverse geographic, racially/ethnically, LGBTQ+, needs of their service area.</p> <p>Use disaggregated race/ethnicity data to inform state, federal, and local policies and research funding priorities.</p> <p>Invest in developing best practices guides, conferences, evaluations, and pedagogical tools for starting, growing, and maintaining a network.</p>
<p>Bring our full selves.</p> <p>Embracing our wholeness requires vulnerability, acknowledging struggles, and being receptive to love.</p>	<p>We learned to unapologetically embrace our Filipino-ness as scholars, including how it shapes our understanding of public health and healing. As members of the community we sought to serve, we offered each other grace as we each took time to step back when needed. Honestly sharing the struggles we were going through allowed workloads to be redistributed, facilitated collaborative learning opportunities, and attained achievements beyond our individual imagination.</p> <p>As an unstaffed organization, members are drawn to volunteer because of love for the community. However, from a practical sense, funding has enabled us to provide leaders with modest project-based stipends.</p>	<p>Commit to transformation of health and wellbeing through humanization, hope, and healing.</p> <p>Utilize Ethnic Studies Pedagogies and principles in public health to develop critical consciousness and agency.</p> <p>Foundations, local health departments, state and federal organizations should provide funding opportunities and technical assistance for organizations, services, and interventions rooted in and guided by love and community centered healing to start, grow, and maintain a network promoting health equity.</p>
<p>Tell our stories. Decolonizing epistemologies means activating our agency to produce the knowledge that will bring our community closer to liberation.</p>	<p>FilCHA became a space for exposing struggle, shifting the way we understand power, power relations, and how we have struggled with them. We created a space where we were free to explore and choose our own beliefs and actions to address our community wellness and wholeness. Free from self-doubt, microaggressions, and having to justify why FilAms deserve to be understood, our creativity flourished, producing knowledge for our people.</p> <p>Despite our shared commitment to the FilAm community, the extensive diversity of FilCHA's membership inevitably generates different perspectives. We occasionally navigate difficult discussions through which we challenge each other.</p>	<p>Produce art, movement, performance, projects, businesses, and scholarship that expresses structurally excluded perspectives, counternarratives, medicine, and knowledge.</p> <p>Provide public access to disaggregated data.</p> <p>Foundations, local health departments, state and federal organizations should invest funds into community stories, community defined practices, networks, and languages to drive health education, research, services, and policy.</p> <p>Create opportunities for self-determination that enable community members' intersectional epistemologies to guide decision-making.</p>

FilAm, Filipinx/a/o American; FilCHA, Filipinx/a/o Community Health Association. Kapwa refers to the Pilipino core value of unity with others, indicating a deep connection with and commitment to community.

Implications

Our case study advances the idea that antiracist public health praxis is both an individual and a collective process facilitated through counterspaces. This cannot be done in isolation and fundamentally contradicts public health's long held focus on individuals as the unit of analysis and the assumed neutrality of researchers. In solidarity with other communities that struggle for visibility, we offer lessons learned and recommendations for shifting attention to the margins through kapwa (Table 3).

We must interrogate how population-level approaches erase the experiences of structurally excluded groups, including FilAms. We push back on the notion that FilAm health is only worth studying or intervening upon when juxtaposed against whiteness (2). We commit to exposing the structures that reject grant proposals and scientific papers on the faulty logic that rationalize FilAms as undeserving of investment or attention. Rather, examining, enacting, and advocating for FilAm health is warranted because of our complexities and inherent deservingness. Multidisciplinary, community-led organizing for public health rooted in love for the people is essential for disrupting our continued erasure and promoting community wellness.

FilAms and other overlooked communities would benefit from institutionalized investment in interdisciplinary collaboration and self-determination. This paper briefly touched on a few strengths-based approaches [e.g., desire-based research (52)] and community-based healing [e.g., critical kapwa (46) and community responsive wellness (5)]. Numerous other ways of knowing exist. Scholarship on anti-Asian racism and public health could benefit from theories rooted in ethnic studies (91), critical race theory (92), and decolonizing methodologies (2).

The conditions surrounding FilCHA were unique but developing counterspaces for antiracist public health praxis is not only feasible but imperative for health equity. "Resistance should not be mistaken for remedy" (2) but rather an opportunity to engage in reflection on how public health must transform. Regardless of numeric representation, tackling health equity remains elusive if lived experiences of those students and community members are not genuinely valued as legitimate ways of knowing (33). Though not formally theorized as a counterspace, the National Cancer Institute's pre-doctoral Minority Training Program in Cancer Control Research has exemplified a humanizing space for graduate students of color to engage in collective meaning-making since 1999 (93). We recommend that health workforce diversity programs similarly prioritize the humanization of scholars of color and encourage public health educators to promote concepts from critical race theory of education (e.g., counterspace) and intersectional epistemologies (e.g., Pinayism) (7, 94).

Conclusion

Pinayism guided our realization that kapwa has been our strategy for survival. Using critical kapwa for our collective healing restores our shared power, driven not by obligation but a loving commitment to community (46). FilCHA emerged out of an interconnected network of relationships. As with deep systems changes that originate from small interactions and relationship building, it was through the tweets, letters, and conversations that built FilCHA as a counterspace to humanize, heal, and decolonize. FilCHA has become a site for exposing struggle and reclaiming collective power.

The field of public health is not immune to the white supremacist culture and structures upon which the United States was founded. Dismantling anti-Asian racism requires more than documenting incidence rates of overt hate. Harnessing the collective power of researchers as truth seekers and organizers as community builders in affirming spaces for holistic community wellbeing is love in action. This moment demands that we explicitly name love as essential to antiracist public health praxis.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

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Lost on the frontline, and lost in the data: COVID-19 deaths among Filipinx healthcare workers in the United States

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Background: Filipinx Americans working in healthcare are at risk for COVID-19 death but lack consistent mortality data on healthcare worker deaths. The lack of disaggregated data for Asian subgroups proliferates anti-Asian structural racism as the needs of high-risk groups are systematically undetected to merit a proper public health response. We work around this aggregated data problem by examining how the overrepresentation of Filipinx in healthcare contributes to COVID-19 mortality among Asian American populations.

Methods: To overcome the lack of COVID-19 mortality data among Filipinx American healthcare workers, we merged data from several sources: Kanlungan website (the only known public-facing source of systematically reported mortality data on Filipinx healthcare workers nationally and globally), National Center for Health Statistics, and 2014–2018 American Community Survey. We examined county-level associations using *t*-tests, scatterplots, and linear regression.

Findings: A higher percentage of Filipinx among Asian Americans was correlated with a higher percentage of COVID-19 decedents who are Asian Americans ($r = 0.24$, $p = 0.01$). The percentage of Filipinx in healthcare remained a strong predictor of COVID-19 deaths among Asian Americans even after adjusting for age, poverty, and population density (coef = 1.0, $p < 0.001$). For every 1% increase in Filipinx among the healthcare workforce, the percentage of Asian American COVID-19 decedents increased by 1%.

Interpretation: Our study shows that the overrepresentation of Filipinx in healthcare contributes to COVID-19 mortality disparities among Asian Americans. Our findings advocate for systems change by practicing anti-racist data agendas that collect and report on Asian subgroups for effective real-time targeted approaches against health inequities.

KEYWORDS

healthcare workers, Filipino Americans, data disaggregation, COVID-19, mortality

Introduction

Data on COVID-19 consistently show Asian Americans having lower numbers of cases and deaths compared to other major race and ethnic groups in the United States. However, these numbers have not aligned with the reports and experiences coming from diverse Asian American communities, including Filipinx/a/o (hereafter referred to as Filipinx) Americans. Despite calls from advocates and scholars for more disaggregated data that identifies Asian American subgroups in order to illuminate inequities during the COVID-19 pandemic, these data are still consistently lacking in the nation. This research paper uses innovative crowdsourced data in conjunction with detailed race data to work around the lack of disaggregated data to demonstrate how the burden of COVID-19 falling on Filipinx American populations has contributed to Asian American mortality disparities. In the United States, many federal health surveys (e.g., NHANES, BRFSS) have consistently reported that Asian Americans are faring better on most health indicators compared with other major race/ethnicity groups. Asian Americans are least likely to be obese and have hypertension, and have second to the lowest percentage of individuals who have diabetes (NHANES) (1). Asian Americans also have the lowest prevalence of current asthma among children (Health) and cigarette smoking among youth (2). Even when surveys provide more detailed response options for the Asian race question (i.e., NHANES and NHIS), data on Asian Americans are often presented in the aggregate (3). Disaggregated data, however, reveal greater health disparities among Filipinx/a/o (hereafter referred to as Filipinx) Americans compared with other Asian American groups. Filipinx have higher prevalence of obesity, asthma, and diabetes compared with Vietnamese, Chinese, Japanese and Koreans, and non-Hispanic white (4). Compared to other Asian groups, Filipinx also have higher prevalence of hypertension compared with non-Hispanic white. Filipinx also had the highest incidence rates of prostate cancer and thyroid cancer, and the highest mortality rates for breast cancer, prostate cancer and thyroid cancer among the largest Asian groups in California (5) but most cancer research continue to report findings in the aggregate (6, 7). These health disparities persist even among Filipinx who score well on socioeconomic measures that are often associated with better health outcomes (i.e., employment, education, English language proficiency), which suggests the need to expand these traditional measures to include indicators of structural racism that result to entrenched inequities (8–10).

Lack of disaggregated data for Asian American groups supports and proliferates anti-Asian structural racism. Failure to collect and report disaggregated data for Asian American populations is a structural barrier that makes it impossible to describe the COVID-19 burden using unbiased data in these diverse populations. The COVID-19 pandemic has revealed

holes in existing public health infrastructure. This includes gaps in our epidemiological data collection and reporting systems, upon which we base our public health programs and policies to mitigate population-level problems such as disparities in disease incidence and mortality. Among United States (US) counties with Asian American populations, the proportion of the population that identifies as Asian American ranges from 0.01% in Red River Parish, Louisiana and Benton County, Mississippi to 43% in Honolulu County, Hawaii. Disaggregation of COVID-19 data for detailed Asian American groups may be hindered by small numbers in counties with statistically insufficient representation of Asian Americans. Data that are lacking in refinement can have dire consequences on populations who become lost or hidden in the statistical reports produced by government agencies. This is certainly true in the US for many minoritized racial or ethnic subgroups who were disproportionately impacted during the COVID-19 pandemic, but whose disparities in infection and death received little attention and no mitigation. One such population are Filipinx Americans, who make up about 18% of Asian Americans (11).

Filipinx Americans, as well as other Asian subgroups, received minimal attention during the COVID-19 pandemic due to the lack of COVID-19 infection and mortality data disaggregated by Asian subgroup in public health surveillance systems. According to the Centers for Disease Control and Prevention, Asian Americans had lower case rates and similar hospitalization and death rates as white Americans throughout the pandemic; this is compared to American Indian or Alaska Native, Black or African American, and Latinx persons, all of whom had higher case rates and over two times the hospitalization and death rates as white persons (12). However, treating Asian Americans as a single aggregate race group in COVID-19 data reporting hides disparities in this diverse population, including among Filipinx. During one of the peaks of the pandemic on 27 October 2020, restricted death certificate data showed that Filipinx accounted for 29.5% of COVID-19 deaths among Asian Americans in California, the most of any other Asian subgroup, even though they only represented about a quarter of the state's Asian population (13). Among California's Filipinx healthcare workers, an estimated 6.4% of COVID-19 confirmed cases ended in death, a death-to-case ratio that was nearly 16 times more severe than that of non-Latinx white healthcare workers (14). Filipinx working in healthcare throughout the US were particularly at risk for COVID-19 death, but lack of consistent data on healthcare worker mortality and data disaggregated by Asian subgroup hampered further examination into this topic. Although Filipinx make up 4% of the total US nursing workforce, a report from National Nurses United revealed that Filipinx made up 31.5% of all US nurse fatalities (15). In the US, 16% of nurses are immigrants (16). Filipinx have long immigrated to the U.S. to fulfill shortages in the healthcare workforce, including in fields such as nursing. The U.S. has had a strong presence in the Philippines

for over a century, historically shaping higher education on the Philippines. While many Filipinxs are trained in nursing and related fields, low wages in the Philippines combined with healthcare worker shortages in other countries have led to a brain drain of these workers to countries such as the United States (17–19). Among the foreign-born healthcare workforce in the US, Filipinx immigrants make up 28% of registered nurses, 12% of personal care aides, and 4% of physicians and surgeons (20). In the long-term care sector (home health, skilled nursing facilities, residential care facilities and private household), the percentage of Filipinx healthcare workers is almost 5 times larger than the share of the U.S. general population aged 85 and older who most likely need long-term care services (21).

Filipinxs likely bore a high share of the COVID-19 deaths among Asian Americans in places where they accounted for a large percentage of the population or large proportion of the healthcare workforce. Not only are Filipinxs overrepresented in the healthcare workforce in specific areas round the US, but Filipinxs, also, are more likely than other Asian subpopulations to have preexisting chronic health conditions and live in intergenerational homes, placing the Filipinx community at greater risk of COVID-19 infection and death (4, 22, 23). However, Hawai'i is the only US state that currently disaggregates Asian subgroups in public-facing COVID-19 statistics. There, Filipinxs account for 24% of COVID-19 deaths, although they make up only 16% of the total population (24). The 330 deaths among Filipinxs in Hawai'i as of May 2022 cause them to have the highest COVID-19 death rate (148 per 100,000) in the state among Asian Americans and second only to Pacific Islanders who have the highest COVID-19 death rate. Outside of Hawai'i, data on Filipinx deaths due to COVID-19 disaggregated from the Asian American catch-all are practically non-existent across the nation.

How do we highlight gaps in public health surveillance when the data do not exist? One solution has been for members of the public to crowdsource data. In April 2020, the grassroots transnational organization AF3IRM began the website called “Kanlungan” to memorialize fallen Filipinx/a/o (hereafter referred to as Filipinx) healthcare workers around the world who have died of COVID-19 (25). Kanlungan, the Tagalog word for “refuge” or “shelter,” reflects the AF3IRM's desire to create a space to heal from the loss of so many Filipinxs who were themselves healers by occupation. Kanlungan is the only known source of systematically collected public-facing data on Filipinx healthcare workers deaths in the entire US. The Kanlungan tributes describe Filipinxs, many of whom worked as nurses, doctors, medical technicians, janitorial staff, and other health-related occupations. Currently, the Kanlungan website reports the highest number of fallen Filipinx healthcare workers in the US compared to any other country in the world, including the Philippines. The Kanlungan website provides faces and stories to a narrative where the greatest number of immigrant US

healthcare workers who died from COVID-19 are from the Philippines (26).

Salient to exposing hate in Asian American communities, the interlocking relationships between imperialism, transnational labor, and racism on Filipinx healthcare workers contextualizes the production of the health inequities impacting the Filipinx community in the US (17). To further accentuate the point that Filipinxs have contributed to COVID-19 disparities among Asian Americans, we conducted an analysis to evaluate whether the percentage of Filipinxs among the Asian American population and the percentage of Filipinxs among healthcare workers are associated with the percentage of COVID-19 decedents who are Asian Americans in US counties for which data are available.

Methods

Data sources

To estimate county of residence of Filipinx healthcare workers who died of COVID-19, we retrieved data from the Kanlungan website during the month of December 2020 (25). In deciding who to include on the website, the AF3IRM team that established the Kanlungan website set two standards in data collection. First, the team found at least one source explicitly stating that the fallen healthcare worker was of Philippine ancestry; this was mostly media articles or obituaries sharing the life stories of the deceased. In a few cases, the confirmation came directly from the deceased healthcare worker's family member who submitted a tribute. Second, the team required a minimum of two sources to identify and announce fallen healthcare workers. We retrieved 86 US tributes from Kanlungan, but only 81 of them had information on county of residence. In total, 45 US counties with at least one reported tribute to a Filipinx healthcare worker who died of COVID-19 were identified for analysis and will hereafter be referred to as “Kanlungan counties.”

Mortality data by county, race, and ethnicity came from the National Center for Health Statistics (NCHS) (27). Updated weekly, this dataset is based on vital statistics data for use in conducting public health surveillance in near real time to provide provisional mortality estimates based on data received and processed by a specified cutoff date, before data are finalized and publicly released (28). We used the data released on 30 December 2020, which included provisional COVID-19 death counts from 1 February 2020 to 26 December 2020—during the height of the pandemic and prior to COVID-19 vaccines being available—for counties with at least 100 total COVID-19 deaths. During this time period, 501 counties (15.9% of the total 3,142 counties in all 50 states and Washington DC) (29) met this criterion. Data on COVID-19 deaths were available for six major racial/ethnic groups: Non-Hispanic White, Non-Hispanic Black,

Non-Hispanic Native Hawaiian or Other Pacific Islander, Non-Hispanic American Indian or Alaska Native, Non-Hispanic Asian (hereafter referred to as Asian American), and Hispanic. People with more than one race, and those with unknown race were included in the “Other” category. NCHS suppressed county-level data by race and ethnicity if death counts are <10. In total, 133 US counties reported COVID-19 mortality data for Asian Americans. These data were used to calculate the percentage of all COVID-19 decedents in the county who were Asian American.

We used data from the 2018 American Community Survey (ACS) five-year estimates, downloaded from the Integrated Public Use Microdata Series (IPUMS) to create county-level population demographic variables (30). IPUMS is publicly available, and the database integrates samples using ACS data from 2000 to the present using a high degree of precision (30). We applied survey weights to calculate the following variables at the county-level: median age among Asian Americans, average income to poverty ratio among Asian Americans, the percentage of the county population that is Filipino, and the percentage of healthcare workers in the county who are Filipino. Healthcare workers encompassed all healthcare practitioners, technical occupations, and healthcare service occupations, including nurse practitioners, physicians, surgeons, dentists, physical therapists, home health aides, personal care aides, and other medical technicians and healthcare support workers. County-level data were available for 107 out of the 133 counties (80.5%) that had NCHS data on the distribution of COVID-19 deaths among Asian Americans, and 96 counties (72.2%) with Asian American healthcare workforce data.

The ACS 2018 five-year estimates were also the source of county-level percentage of the Asian American population (alone or in combination) who are Filipino (11). In addition, the ACS provided county-level population counts (29) to calculate population density (people per 1,000 people per square mile), estimated by dividing the total population by the county area, then dividing by 1,000 people. The county area was calculated in ArcGIS 10.7.1 using the county boundary shapefile and projected to Albers equal area conic (for counties in the US contiguous states), Hawai'i Albers Equal Area Conic (for Hawai'i counties), and Alaska Albers Equal Area Conic (for Alaska counties) (23).

Statistical analysis

For the maps, we obtained county-level Filipino American population data from the ACS 2018 5-year estimates. We identified counties that belonged to the top quintile of Filipino American population counts and counties where Filipino Americans make up more than half of the Asian American population.

We also used the linked data from Kanlungan, NCHS, and ACS to examine county-level characteristics for all counties that reported Asian American COVID-19 mortality data. We compared counties that reported at least one Kanlungan death (i.e., Kanlungan counties) to counties that did not report any Kanlungan death (i.e., non-Kanlungan counties). We used independent *t*-tests for two samples to determine the *p*-values for differences between Kanlungan counties and non-Kanlungan counties. Next, we determined whether the county-level percentage of Asian Americans among COVID-19 deaths was correlated separately with county-level percentage of Asian Americans who are Filipino and percentage of healthcare workers who are Filipino.

We constructed simple and multivariable linear regression models separately for the two main independent variables—percentage of population who are Filipino and percentage of healthcare workers who are Filipino—to assess how each is associated with the percentage of COVID-19 decedents who are Asian Americans. Multivariable stepwise forward regression models accounted for median age, household income to poverty ratio, and population density to rule out potential confounding due to these county-level factors. These variables were chosen as potential confounders, since they might be independently associated with both the Filipino population as well as COVID-19 deaths. We restricted the models to counties with information on all the covariates.

Results

Figure 1 shows that 505 counties belonged to the top quintile of Filipino American population count across 49 states and Washington D.C. (except Vermont). In the top twenty counties with the largest Filipino American population, Filipino American population count ranged from 47,350 (Margin of Error: 2,528) to 406,297 (Margin of Error: 6,250) (counties of Los Angeles, Honolulu, San Diego, Clark, Santa Clara, Alameda, Orange, San Mateo, Cook, Riverside, King, Contra Costa, Sacramento, San Bernardino, Solano, San Joaquin, Maui, Maricopa, San Francisco and Queens). Filipino Americans live in 85.3% of counties that have Asian American populations, compared to 75.0% for Chinese Americans and 68.1% for Asian Indian Americans.

Meanwhile, Figure 2 shows that Filipino Americans make up more than half of the Asian American population in 355 counties across 40 states. Among 1,483 rural counties with the smallest Asian American populations (i.e., the lowest two quintiles of Asian American population ranging from 1 to 229), Filipino Americans make up more than half of the Asian population in 278 counties. They are present in more rural counties than the two largest Asian groups in the US: Chinese Americans are present in 119 and Asian Indian Americans are present in 117 of these rural counties.

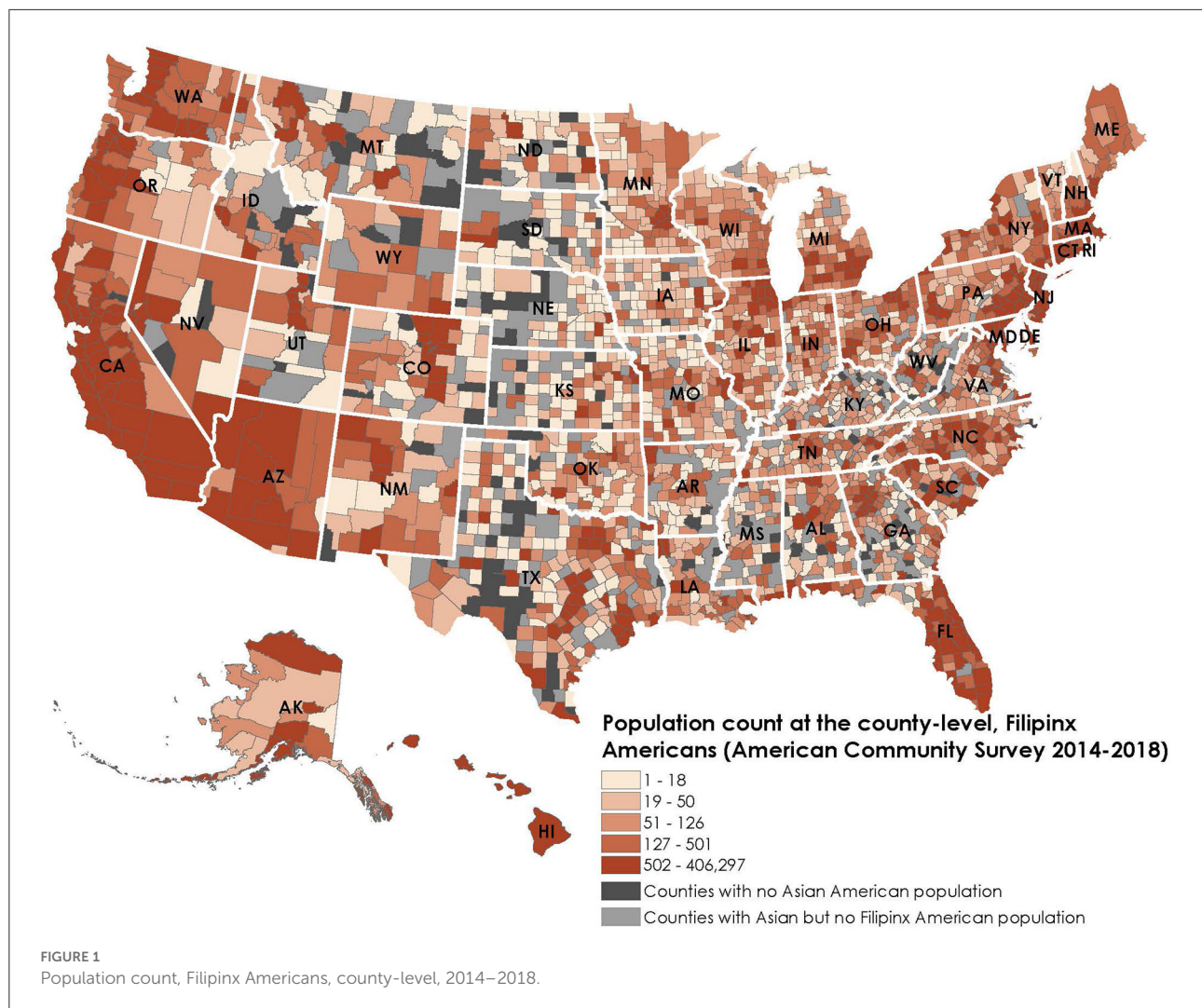
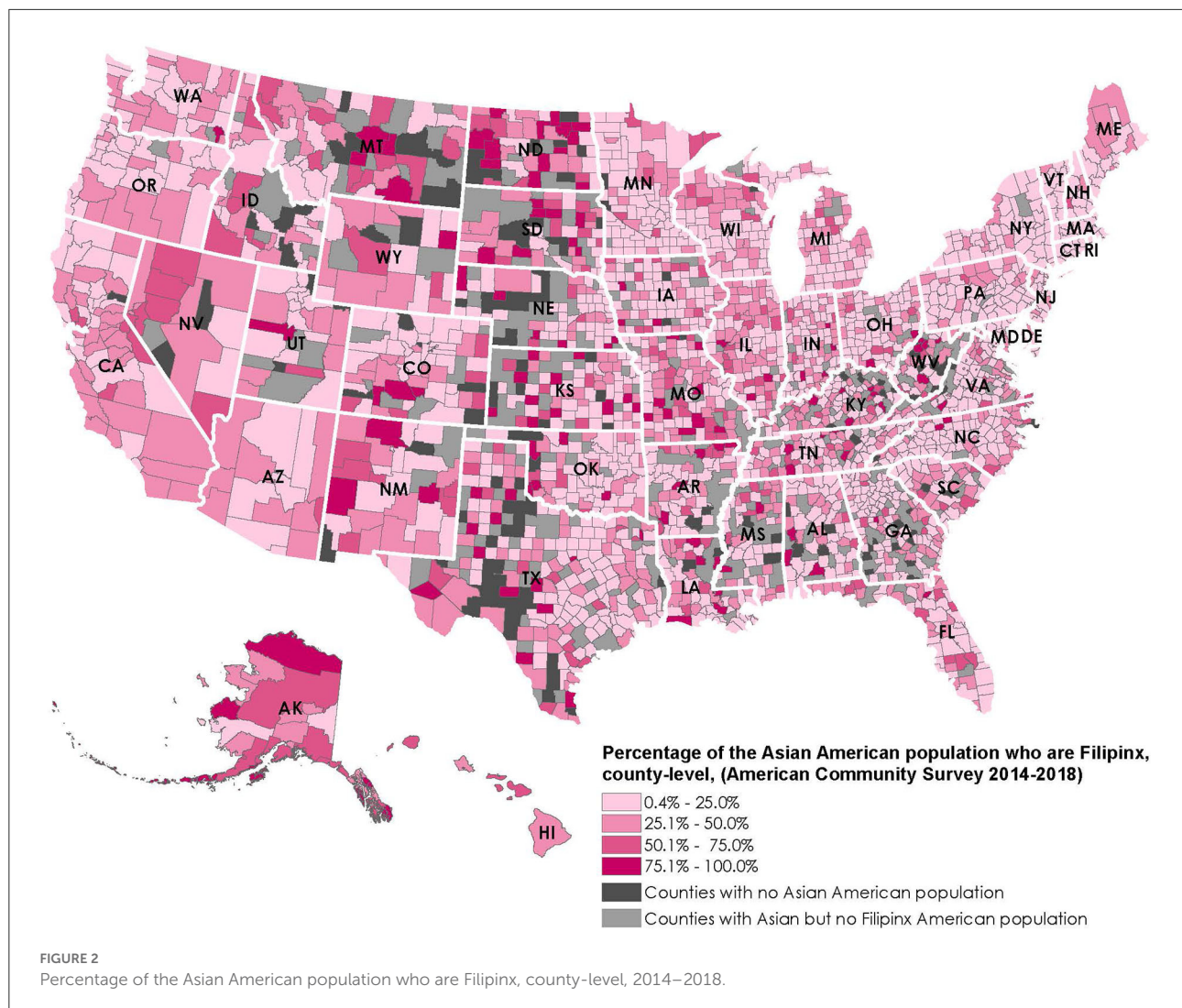


Table 1 shows summary statistics for all 133 US counties included in the analysis. On average, the median age among Asian Americans was 34 years old and the mean household income to poverty ratio among Asian Americans was 5.5. Asian Americans made up 8.8% of the total population on average in these counties, and Filipinx made up 15.3% of the Asian population on average in these counties. Filipinx account for an average of 4.7% of the healthcare work force in these counties. Among COVID-19 decedents, 6.1% on average were Asian Americans. Median age of the Asian American population and household income to poverty ratio were slightly higher in Kanlungan counties compared to non-Kanlungan counties, although the p -values did not fall below 0.05 ($p = 0.09$ for median age and $p = 0.49$ for household income to poverty ratio). The mean population density in Kanlungan counties (7.3 population per 1,000 population per square mile) was much higher than in non-Kanlungan counties (1.9 population per 1,000 population per square mile) ($p = 0.04$). Compared to non-Kanlungan counties, the mean

percentage of the population who are Asian Americans, the mean percentage of Asian Americans who are Filipinx, and the mean percentage of the healthcare workforce who were Filipinx are higher in Kanlungan counties, but none of the p -values for these differences fell below 0.1. In Kanlungan counties, 7.0% of COVID-19 decedents were Asian Americans which was slightly higher than in non-Kanlungan counties (5.8%), but the difference did not reach statistical significance ($p = 0.38$).

Linear correlation analyses show that both the percentage of Filipinx among Asian Americans ($r = 0.24$, $p = 0.01$) and percentage of Filipinx in the healthcare workforce ($r = 0.73$, $p < 0.0001$) were positively correlated with percentage of COVID-19 decedents who are Asian Americans, but the latter correlation was higher. Table 2 shows the results of the simple and multivariable linear regression models estimating the association between the county-level percentage of Asian Americans who are Filipinx and the percentage of COVID-19 decedents who are Asian Americans. An increase in the



Filipinx percentage of the Asian American population in the county was associated with a higher percentage of COVID-19 decedents who are Asian Americans (Model 1: coef = 0.2, $p < 0.05$) but the positive linear association was attenuated after adjusting for median age (Model 2: coef = 0.1, $p > 0.05$). The association remained minimal after adjusting for household income to poverty ratio and population density in Models 3 and 4. Table 3 shows a positive linear association between the percentage of healthcare workers who are Filipinx and the percentage of COVID-19 decedents who are Asian Americans (Model 1: coef = 1.0, $p < 0.001$). This positive linear association remained after accounting for median age, household income to poverty ratio, and population density. The results suggest that the percentage of COVID-19 decedents who are Asian Americans increases by 1.0% (standard error: 0.1) on average for every 1.0% increase in the percentage of healthcare workers who are Filipinx, after accounting for median age, household income to poverty ratio, and population density (Model 4).

Discussion

The COVID-19 pandemic revealed serious and detrimental gaps in public health surveillance by racial and ethnic subgroups, including for Filipinx Americans. We contend that lack of detailed surveillance data for Asian subgroups is a form of anti-Asian structural racism that causes disparities to be invisible and solutions to be non-existent.

Aggregated data workaround

Evidence shows that Filipinxs have died at a disproportionate rate due to COVID-19, but the lack of data makes this disparity lost in the vast majority of data reporting. Crowdsourced data including the Kanlungan tribute and reports of high rates of COVID-19 death among Filipinx healthcare workers, have attempted to fill this data void. In addition, to work around the lack of disaggregated data, we used

TABLE 1 Summary statistics for U.S. Counties that reported COVID-19 deaths among Asian Americans.

County-level variable	All counties (<i>n</i> = 133) Mean (SD)	Kanlungan counties ^a (<i>n</i> = 45) Mean (SD)	Non-Kanlungan counties ^b (<i>n</i> = 98) Mean	<i>p</i> -value ^c
Median age among Asian Americans	33.6 (3.3)	34.4 (2.8)	33.2 (3.5)	0.09
Mean household income to poverty ratio among Asian Americans	5.5 (1.5)	5.7 (1.5)	5.4 (1.4)	0.49
Population density ^d	3.3 (7.9)	7.3 (14.4)	1.9 (2.6)	0.04
Percentage of population who are Asian Americans ^e	8.8 (7.3)	10.3 (7.7)	8.3 (7.2)	0.17
Asian Americans who are Filipinx	15.4 (11.2)	18.7 (11.2)	14.3 (11.0)	0.04
Healthcare workforce that is Filipinx	4.7 (5.3)	6.1 (4.9)	4.1 (5.4)	0.08
COVID-19 decedents who are Asian Americans ^e	6.1 (6.9)	7.0 (5.9)	5.8 (7.2)	0.38

^aCounties with at least one tribute to a Filipinx healthcare worker who died of COVID-19 reported in the Kanlungan website.

^bCounties that have no reported tributes to a Filipinx healthcare worker who died of COVID-19 in the Kanlungan website.

^cP-values are from the independent t-tests for two samples comparing counties where one or more Filipinx healthcare worker death is reported on the Kanlungan website to counties where no Filipinx healthcare worker deaths are reported on the Kanlungan website. We used the Satterthwaite variance estimator if the variances for the two groups are statistically different, and the pooled variance estimator if the two groups have the same variance.

^dPopulation density is measured as people per 1,000 people per square mile.

^eAsian Americans refer to non-Hispanic Asians.

TABLE 2 Regression of percentage of COVID-19 decedent who are Asian Americans on percentage of Asian Americans who are Filipinx in U.S. counties, *n* = 107.

Variables	Model 1	Model 2	Model 3	Model 4
Percentage of Asian Americans who are Filipinx	0.2* (0.1)	0.1 (0.1)	0.04 (0.1)	0.1 (0.1)
Median age among Asian Americans		1.0** (0.2)	1.1** (0.2)	1.1** (0.3)
Mean household income to poverty ratio among Asian Americans			−0.4 (0.5)	−0.4 (0.5)
Population density (per sq. mi.)				0.1 (0.1)
Constant	4.1* (1.2)	−27.3** (6.6)	−28.5** (6.8)	−27.7** (6.9)
Adjusted R-squared	0.05	0.21	0.21	0.21

Standard errors are reported in parentheses. **p* < 0.05, ***p* < 0.001.

county-level population data to show the strong correlations between the percentage of Filipinx among Asians and the percentage of Filipinx among healthcare workers with Asian American COVID-19 mortality. These data workarounds together provide further evidence of COVID-19 mortality disparities for Filipinx, evidence that should illicit public health action. However, these data solutions are far from perfect but a consequence of this “data tax” on populations invisible in public health data systems. More consistent and widespread disaggregation of data are needed to highlight the current COVID-19 disparities, as well as other disparities that Filipinx and other Asian subgroups continue to experience.

Data justice for Filipinx American healthcare workers

The overrepresentation of Filipinx in deaths among healthcare workers is indicative of inadequate workplace

precautions meant to shield healthcare workers from exposure to patients with suspected or confirmed COVID-19 within the first year of the pandemic (31). This inadequacy of workplace protections may be shaped by what Nazareno and colleagues (25) note as “socially constructed power inequities and inferior views of Filipinos” owing to the past US imperial presence in the Philippines. The unique past colonial relationship between the US and the Philippines (17, 32) may still be embedded in contemporary workplace dynamics manifesting in suppression of agency to request Personal Protective Equipment (PPE), and fueling social desirability of proving worth by volunteering to be the first to take care of the sickest COVID-19 patients at the cost of self- and family-care, mentally and physically. Certainly, this was the narrative heard from media coverage and discussed extensively in recent conceptual and empirical work (25) that estimated higher proportions of Philippine-trained nurses working in inpatient care and acute care settings than US-trained nurses.

TABLE 3 Regression of percentage of COVID-19 decedents who are Asian Americans on percentage of healthcare workforce that is Filipino in U.S. counties, $n = 96$.

Variables	Model 1	Model 2	Model 3	Model 4
Percentage of healthcare workforce that is Filipino	1.0** (0.1)	0.9** (0.1)	0.9** (0.1)	1.0** (0.1)
Median age among Asian Americans		0.2 (0.2)	0.3 (0.2)	0.2 (0.2)
Mean household income to poverty ratio among Asian Americans			−0.2 (0.4)	−0.2 (0.4)
Population density (per sq. mi.)				0.1* (0.1)
Constant	1.8* (0.7)	−5.6 (5.7)	−6.0 (5.8)	−4.3 (5.8)
Adjusted R-squared	0.52	0.53	0.52	0.55

Standard errors are reported in parentheses. * $p < 0.05$, ** $p < 0.001$.

Our findings reveal higher percentage of Filipino Americans among Asian Americans was correlated with a higher percentage of COVID-19 decedents who are Asian. Moreover, the percentage of Filipino in healthcare was a strong predictor of COVID-19 deaths among Asian Americans in those counties even after adjusting for age, poverty, and population density. Furthermore, the contribution of the percentage of the healthcare workforce that is Filipino to overall Asian American COVID-19 mortality suggest that not only are Filipino healthcare workers are at high risk of mortality with infection, but also their high-risk occupations may unintentionally be contributing to the spread of COVID-19 to their family members who do not work in healthcare. Risk to older household members could be higher in Filipino families. Compared to the US population (19%), a higher share of Asian Americans live in intergenerational households (26%), (26) and Filipinos (33%) have a higher percentage of intergenerational households than Asian Americans overall (33).

Counties with a high percentage of healthcare workers who are at increased risk should prioritize reducing the number of COVID-19 infections among their healthcare workforce by tracking infections, reducing spread, and enhancing workplace safety protocols if needed (34). This also means providing appropriate contact tracing, resources, and healthcare for infected healthcare workers to recover and to be able to protect their households from infection. Social determinants of health and occupation-related factors should be considered together with underlying chronic conditions when designing public health strategies that aim to reduce the COVID-19 mortality burden among the most impacted populations (29). Furthermore, these healthcare workers made high-risk by working on the frontline in direct care and support occupations (i.e., housekeeping staff) must be prioritized by leadership for burnout and mental health distress prevention and support among their staff, specifically in acute/critical care settings, outpatient and long term care facilities, as well as skilled nurse facilities, hospice care, and home healthcare settings. Such plans to support healthcare staff may also consider normalizing policies that support families and household members who are

in close contact with frontline workers on a daily or regular basis. This may include resources that help families to understand the extent of and provide support for healthcare worker burnout, mental health challenges, or traumatic experiences compounded by the pandemic.

Disaggregated race data for Asian subgroups is absolutely vital to addressing disparities. Unfortunately, underlying systematic barriers in the form of low funding rate for health research focused on Asian Americans and for supporting the careers of Asian American researchers derail any progress to date. In the past two decades, only 0.17% of the overall National Institutes of Health (NIH) budget was allocated to Asian American, Native Hawaiian, and Pacific Islander (AA/NHPI)-related clinical research projects (35). Of these projects, only 60% mentioned an AA/NHPI subgroup. Only 5% of the total funding allocated to AA/NHPI-related projects were for research career awards, training grants, and fellowships. To date, only the state of Hawaii publicly reports data on cases and deaths for their most populous Asian subgroups, which includes Filipino Americans. Disaggregated COVID-19 mortality data in California was only available as restricted data; and the inclusion of Filipinos in the state's COVID-19 vaccination plan was a modest acknowledgment of the disproportionate impact on the Filipino community (30). The common practice of lumping all Asian Americans together perpetuates the racist trope that all Asians are alike and lends to the invisibility of distinct Asian communities (31). Filipino are the third largest Asian American subgroup in the US, after Chinese Americans and Asian Indian Americans who more likely live in discernible ethnic enclaves throughout the US. Unlike their counterparts, the Filipino population are largely scattered within metropolitan neighborhoods/cities and across rural spaces to fill in healthcare and teaching gaps (32). Our figure visualizes that Filipinos live in 85.3% of counties that have Asian American populations, compared to 75.0% for Chinese Americans and 68.1% for Asian Indian Americans (11). Filipinos also make up the predominant Asian subgroup in 34.5% of counties where Asian Americans live and where there is a predominant Asian subgroup, compared to 12.9% for Chinese Americans

and 11.4% for Asian Indian Americans (11). Therefore, we recommend that states such as California, New York, Texas, New Jersey, Illinois, Washington, Florida and Virginia—where the largest Asian populations are located (36), even larger than Hawai'i—consider disaggregating Asian American data for the largest Asian subgroups. Other states such as Nevada, Alaska, Virginia, Maryland, and Massachusetts, where Asian Americans make up a larger than the US average (6.7%) proportion of the state's population (36), are highly encouraged in doing the same. Community groups have also been advocating for county-level disaggregated data for Asian subgroups. In Clark County, Nevada (which includes all the residents surrounding Las Vegas) for example, a majority (51.5%) of Asians Americans are Filipinx (11) but, to date, the health district's public-facing COVID-19 aggregates Asian all together and combines them with Pacific Islanders as well, hiding potential disparities (37).

Future considerations

Improved data reporting on mortality and morbidity among healthcare workers would also help to address the toll that the COVID-19 pandemic and future public health emergencies have. A rapid expert consultation from the National Academies of Sciences, Engineering and Medicine concluded that a robust national data reporting system would support strategies and policies to reduce COVID-19 mortality and morbidity among healthcare workers (38). For this data system to accurately capture the disproportionate toll on race/ethnic minority populations, it should include requirements to report data for race/ethnicity groups that are more detailed than the standards set forth by the Office of Management and Budget (35). Meanwhile, given our findings, we recommend that the top counties where Filipinx make up a large percentage of the healthcare workforce, including the counties of Alameda, Contra Costa, Los Angeles, San Diego, San Joaquin, San Mateo, Santa Clara, and areas surrounding metropolitan counties like San Bernardino and Riverside (all counties are in California), Honolulu (Hawai'i), Clark (Nevada), Bergen and Hudson (both in New Jersey) where more than 10% of the healthcare workforce are Filipinx (30), should at least disaggregate Filipinx from Asian Americans in not only COVID-19 incidence and mortality data, but public health surveillance of beyond the traditional health indicators (e.g., health insurance, education, income). Of course, confidentiality and stability of data are of utmost importance, and data producers should continue to test various suppression and significance rules in different geographies, in order to provide meaningful disaggregated data that could inform public health policy. Disaggregated Filipinx data for healthcare workers and the population at large are needed in real-time to diagnose issues of structural racism and systemic discrimination that plagues proper resource allocation, leading to disproportionate health outcomes by race and other forms

of oppression (e.g., gender, disability, immigration status), which are prominent and pronounced during public health emergencies and crises.

Furthermore, workplace protections must be put into place to protect Filipinx healthcare workers in clinical settings. This can include providing adequate personal protective equipment (PPE), as well as having safety and mitigation policies in place to protect health and well-being. These policies may ensure sure that healthcare workers feel supported and have adequate time to perform their duties while protecting their own health and the health of their patients. High quality continuing education paid by employers should include leadership training that communicates the appropriate allocation and use of PPE as well as tips to support self-care and prevent burnout during times of high patient census and crises events. We further emphasize the importance of providing Filipinx healthcare workers with high-quality healthcare and medical leave, not only for themselves, but also to care for their immediate and extended family members beyond the allocated government provision of "COVID hours" (i.e., supplemental paid sick leave) during the pandemic. As Filipinx are more likely to live and interact in close-proximity with others (i.e. intergenerational household, multi-family homes), it is important to protect the well-being of Filipinx healthcare worker households as a means of further ensuring workplace retention and positive health outcomes. It is quite possible that Filipinx healthcare workers are being culturally exploited, undervalued, and underpaid for their labor (32). Adequate pay and benefits are essential social determinants of health for Filipinx healthcare workers that can lessen psychological distress and prevent or delay chronic health issues. Lastly, evidence shows that Filipinx healthcare workers experienced discrimination while on the job during the COVID-19 pandemic (39). Filipinx who experience more workplace discrimination have higher number of health conditions, which can lead to greater mortality (40). Hospital and healthcare settings should mandate anti-discrimination and anti-bias trainings and policies to lessen the additional discrimination stress in the workplace environment.

Limitations

There are a few limitations that should be mentioned. First, our analysis did not account for county-level variation in local stay-at-home orders and guidelines for reopening, but in supplemental analysis (data not shown) using a state-fixed effects unadjusted model, the magnitude of our point estimates for the Filipinx healthcare workers model was comparable and continued to be significant. Second, Kanlungan staff adopted clear and consistent inclusion criteria to include in the list of published tributes but search terms on explicit mentions of terms such as "birthplace" and "Philippines" may have

biased the sample toward immigrant Filipinos. Additionally, reliance on specific social networks, media sources, and online obituaries may have led to selection bias and, as a result, many more Filipino deaths among healthcare workers may have been left out. Therefore, the total count of COVID-19 deaths among Filipino healthcare workers and total count of Kanlungan counties could have been underestimated. It is expected that the number of Filipino COVID-19 deaths in the Kanlungan data ($n = 86$) would be higher than the count reported by National Nurses United ($n = 67$) because the former included three more months of data and non-registered nurses (15). Despite this limitation, we believe Kanlungan is the best source of geographic data on COVID-19 deaths among Filipino healthcare workers publicly available at this time. Third, the NCHS mortality data used in this study are based on provisional estimates, and are therefore, incomplete due to the time lag between when the death occurred and when the information on the death certificate becomes available for NCHS mortality surveillance, which is also dependent on the surveillance protocols and personnel in place which may have caused further delay during the pandemic (28). Fourth, underlying medical comorbidities that increase the severity of COVID-19 (e.g. asthma, cancer, heart conditions, diabetes etc.) were not included in the models because they were unavailable for Asian Americans at the county level. If data are available, future studies may wish to investigate the extent to which comorbidities among Filipino contributed to COVID-19 mortality longitudinally. Fifth, margins of error (MOE) and the coefficients of variation (CV) that could inform the reliability of the population estimates from the American Community Survey were not reported. The choice of a CV cutpoint that defines an acceptable range of error depends on the analysis, and more work is needed to determine if there are CV thresholds appropriate for a specific population, geography or application. Moreover, the call for more disaggregated data should be paired with a call for innovative methods and data visualization that address potentially large sampling errors and confidence intervals associated with smaller subpopulations. Our findings suggest that even with its limitations and small sample size, data on Filipino healthcare worker deaths from the Kanlungan website tracked well with both the percentage of Filipinos among healthcare workers and the percentage of COVID-19 decedents who were Asian American. The Kanlungan website provided rapid early warning signs and justification for examining the contribution of Filipino healthcare workers to COVID-19 mortality among Asian Americans. Our study clearly shows that this overrepresentation of Filipinos in healthcare contributes to COVID-19 mortality disparities among Asian Americans.

Addressing gaps in data that would quantify morbidity and mortality burden among Filipinos, healthcare workers, and other understudied US populations would result to more targeted and real-time solutions that mitigate risk factors for serious complications associated with COVID-19 and other

emerging health problems. Data disaggregation that takes into account the intersectionality of identities experienced by vulnerable populations should also be considered (41). Providing the public with timely death data stratified by, for example, both race/ethnicity and occupation, or by occupation and urban-rural areas (information that are already available in vital statistics or may easily be linked), may produce public health and public policy interventions that could stave off the disturbingly wide health disparities that continue to progress, as was highly apparent during the height of COVID-19 pandemic in late 2020 and in early 2021. These efforts will help to build a better public health infrastructure to ensure that in future events, people who are being lost on the frontline during public health emergencies are not also being lost in reportable mortality data (15).

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found at: <https://doi.org/10.6084/m9.figshare.20353368.v1>.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

LE completed the data analyses and interpreted the data. BM performed the literature review and assisted in pulling data from sources. MS-L assisted in literature review and formatting and submission. NP helped edit the research questions, verified the underlying data and analyses, and guided overall execution. All authors participated in the conceptualization, research, drafting, editing of the manuscript, had full access to the full data used in the study, and accept responsibility to submit for publication. All authors contributed to the article and approved the submitted version.

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Commentary: Racism and structural violence: Interconnected threats to health equity

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A Commentary on

Racism and structural violence: Interconnected threats to health equity

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Introduction

Sharif et al.'s recent publication in "Frontiers in Public Health" highlights the need for collective efforts to address structural racism and violence (1). We extend this work by emphasizing the need for solidarity between Black and Asian Americans in strategies to combat anti-Asian racism¹. During the Civil Rights movements, immigration policies in the United States shifted to favor immigrants with "exceptional" abilities and high levels of education (2), leading to mass media narrative constructions of the "model minority" myth, largely spearheaded by white Americans. This myth simultaneously hyperbolized Asian American exceptionalism while advancing anti-Blackness (3, 4). Despite historic tensions between these communities, there is also a history of solidarity building. For instance, joint efforts between Black and Japanese Americans in the 1960s led to the repeal of the Emergency Detention Act, which allowed the federal government to preventively incarcerate individuals suspected of espionage (5). This example illustrates how historical solidarity efforts between these communities has led to changes in politics,

¹ For the purpose of writing this commentary, we will use the terms Black and Asian American to broadly describe the political and social experiences of these communities. However, we acknowledge that a tremendous diversity of ethnic groups, cultural practices, language, and traditions exist in both of these communities, and recognize that the social construction of race in the United States cannot be disentangled by the political and economic context against which these categories were established.

which evidence suggests can impact tangible indicators of population health (6). We use Camara Jones' theoretic framework (7) to describe how internalized, personally mediated, and institutionalized racism and anti-Blackness can hinder contemporary solidarity efforts.

Internalized racism, anti-Blackness, and colorism

Jones defines internalized racism as, “acceptance by members of the stigmatized races of negative messages about their own abilities and intrinsic worth” (7). Internalized racism, anti-Blackness, and colorism in Asian American communities create critical challenges to solidarity. Origins of colorism in Asian American communities are varied—while colorism among Asian Americans with European colonial histories likely valued lighter skin as a proximity to whiteness, colorism among Asian Americans without this history are instead rooted in perceptions of lighter skin as a proximity to wealth (8–12). In contemporary times, contributors of colorism are more complex, and cannot be disentangled from the globalization of western beauty ideals, which are created, commodified, and disseminated *via* global mass media often spearheaded by wealthier nations and center white beauty and white aesthetics as the global status quo. Across Asian countries, the billion-dollar skin lightening industry (13–15), serves as just one example of continued reinforcement of wealth, beauty, power, and sophistication associated with whiteness (8). Additionally, economic stability often requires alignment with power and whiteness as a tactic for survival and securing generational wellbeing, hindering solidarity between Asian and Black Americans. Racism and capitalism are interconnected systems (16), illustrated by the social and economic advantages based on proximity to whiteness, which has long term impacts on educational attainment, occupational status, income, mate selection, economic mobility, and ultimately health (8, 17–22). For Asian American new immigrants, interest group theory might help explain a desire for alignment with whiteness and rejection of Blackness (23).

Personally mediated racism

Jones defines personally mediated racism as, “prejudice and discrimination, where prejudice means differential assumptions about the abilities, motives, and intentions of others according to their race, and discrimination means differential actions toward others according to their race.” Interpersonal anti-Blackness can be reflected within and between Asian groups (i.e., colorism) and perpetrated by Asian Americans against Black Americans, manifesting as negative assumptions about Black intelligence/abilities, and policing Black bodies in Asian American-owned businesses. Personally mediated anti-Blackness also hurts Asian Americans. Colorism often results

in economic immobility for Asian Americans, i.e., those with darker complexion encounter more economic disadvantage (18, 19) and worse short-and long-term mental health outcomes (20).

Institutionalized racism

Jones defines institutionalized racism as, “differential access to the goods, services, and opportunities of society by race.” One example of institutionalized anti-Black racism in Asian America is the systematic exclusion of Black ownership from the hair extension market. Currently, Korean Americans own the majority of Black beauty supply stores and control the manufacturing and distribution of hair extensions, restricting opportunities for Black Americans to participate in this market (24–27). Racial liberation requires solidarity across economic lines, and while Black-Korean communities have made critical steps to building faith and trust in each other (28), efforts to make systemic changes to the economic distribution of resources and opportunities including access to affordable housing, equitable access to social resources (e.g., affirmative action policies), anti-discrimination laws, and police reform, are critical to combat institutionalized racism against both groups. As another example, white dominance in media has played an important role in perpetuating institutional racism by obscuring intersectional Black-Asian solidarity efforts in favor of dividing narratives. Prevailing mass media narratives implicate Black men as primary perpetrators of anti-Asian violence, despite evidence which found the majority of perpetrators of anti-Asian incidents to be White men when race was reported (29). The media saturation of images of “Black on Asian” violence exists in the general media landscape which systematically over-reports Black crime while systematically under-reporting white crime (30), enforcing harmful stereotypes against Black people (31, 32) and fueling Black-Asian conflict. As a final example, institutionalized racism impacting both Black and Asian Americans can be observed in discourse about affirmative action policies, which scapegoat Black Americans as undeserving and Asian Americans as victims, even though a large proportion of Asian Americans support these policies.

Discussion and contemporary examples

Despite these challenges, contemporary examples of solidarity exist. Asian Americans have made efforts to address anti-Blackness and understand its connection to anti-Asian racism (e.g., Letters for BLM, Asians for Black Lives) (33). Additionally, there are examples of organizations which center decarceral approaches in solutions to violence against Asian Americans (e.g., AAPI Civic Engagement Fund, Compassion in Oakland, Stop AAPI Hate). Ultimately, policies built on

interconnectedness are critical to the mission of health equity. While acknowledging differences between Asian American ethnic groups, laws that were passed to address racism against Black Americans have also benefited Asian Americans. The 14th Amendment, the Civil Rights Act of 1964, the Voting Rights Act of 1965, and the Civil Rights Act of 1968 established citizenship and voting rights, desegregated schools, and outlawed race-based employment and housing discrimination (34–37). Resultant laws have increased Black and Asian American's social mobility (e.g., access to higher education/employment, voting, and homeownership). We implore public health scholars to acknowledge that racial and economic hierarchies rely on division between communities, and that long-term, sustainable solutions to anti-Asian racism must be aligned, and not against, the liberation of Black communities.

Author contributions

EA and AG conceptualized the paper. EA, AG, and CH prepared the first draft of the manuscript. SG reviewed the abstract and manuscript. All authors approved the last draft of the manuscript.

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Measuring Asian hate: Discordant reporting of race-based hate incidents and unfair treatment and association with measures of wellbeing

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Background: During COVID-19, anti-Asian discrimination increased in attention. Hate and unfair treatment are related but do not completely overlap. We expect those who report a hate incident would also report race-based unfair treatment, yet feelings of social desirability or self-blame may lead to under-reporting of unfair treatment.

Objectives: To describe reporting of an experience of race-based hate but not an experience of race-based unfair treatment among Asians in California and explore the association between this reporting discordance with (1) serious psychological distress, (2) forgoing needed medical care, (3) increased household interpersonal conflict, and (4) feeling unsafe in their neighborhood.

Methods: We used the 2020 California Health Interview Survey's AANHPI COVID Module, conducted weighted descriptive and multivariate analyses, and computed adjusted relative risks (RR). The multivariate models controlled for Asian subgroup, age, gender, immigrant status, education level, poverty, and English proficiency.

Results: Among Asians who reported race-based hate (6.9% overall), 62.4% reported not experiencing race-based unfair treatment. Compared to Asians not reporting a hate incident, this "discordant" group was more likely to experience serious psychological distress (RR = 6.9), forgo necessary medical care (RR = 2.4), increased household interpersonal conflicts (RR = 2.7), and feel unsafe in their neighborhoods (RR = 3.0). The "concordant" group did not post significant effects for severe psychological distress nor forgoing necessary medical care.

Discussion: Most Asians reporting hate did not report race-based unfair treatment, and this group is most affected by the consequences of a hate incident. We indicate future directions for research and policy.

KEYWORDS

population surveillance/methods, mental health, survey measurement, interpersonal conflict at home, discrimination, anti-Asian racism, health access, public safety

Introduction

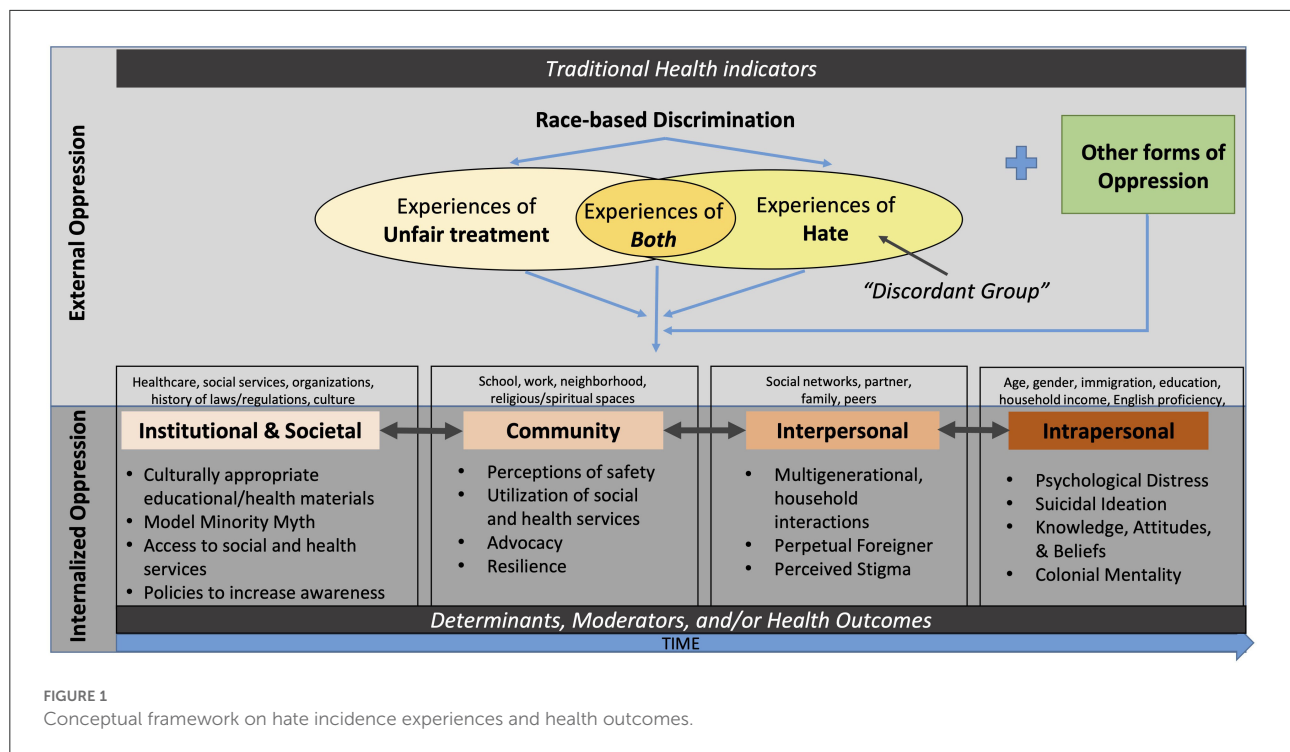
During COVID-19, increased attention has focused on anti-Asian discrimination and its measurement, but research examining various methods used to measure discrimination and association with health outcomes is limited (1, 2). Hate and unfair treatment are related race-based discrimination that can be personally experienced or witnessed but do not completely overlap. Hateful events or actions include overt physical, or verbal abuse provoked by types of bias, microaggressions, or prejudice (3, 4). Conversely, unfair treatment or judgment is often synonymous with inequality or unfairness in a social setting. It may be seen as being passed over for a promotion (5), or receiving poor treatment when seeking care in a doctor's office (6) or when applying for social services (7). Regardless of the situation, the risk of poor health outcomes based on experiences of hate and/or unfair treatment is dependent upon the accumulating effect of the type of hate or unfair action, the volume and frequency of the experiences, the duration of time the events have had on the individual to both internalize and deteriorate morale, among other social moderating/determining factors (e.g., social support, resources, community resilience) (8). Under-reporting of unfair treatment may be driven by a variety of factors, including feelings of social desirability or emotion-focused coping shaped by normalizing scapegoating, xenophobia, colonial mentality, perpetual foreigner syndrome, the model minority myth, and other forms of anti-Asian racism fueled by popular media and codified by political and social institutions (9–12). Lack of self-efficacy and awareness, desire to avoid unwanted attention or embarrassment, fear of deportation or loss of work, and limited culturally-appropriate community resources to both report and seek intervention are a few barriers to reporting personal experiences and/or witnessing discriminatory events among minoritized and immigrant populations (13).

While not all who experience race-based unfair treatment may experience a hate incident, individuals who experience a hate incident may be expected to report experiencing unfair treatment based on their race; ideally, we would expect those to experience bias or prejudice-motivated threats to understand that such treatment is undeserved and wrong. Here, it is important to consider the deep generational history with varying levels of acceptance or tolerance throughout society, with further consideration of how race-based discrimination produces a cumulative impact within persons, communities, and societies over time (14). Among all victims experiencing the same event, many may not share similar feelings or attitudes toward their offenders, nor begin with the same level of acceptance or resilience due to sociodemographic, psychosocial, and previous discrimination differences. The overall impact of race-based discrimination is innately socioecological (e.g., a highly integrative system of societal factors that affect

health), where one's demographics and actions (individual), relationships (interpersonal), living and working environments (community), and policies (societal) influence whether one feels well and thriving or desperate and declining (15). Figure 1 illustrates how one's experiences with discrimination also impacts their own mental health (individual), household or peer interactions (interpersonal), perception of safety (community), and healthcare experiences (structural). Although represented linearly, pathways are cyclical in Figure 1: it represents a visualization of race-based discrimination and multi-level health outcomes. Elements derived from race-based discrimination are contributors to systemic oppression such that societal norms and definitions, experiences of violent acts, and exercising dominance and power over another group not only perpetuates unjust treatment and hatred but also synergizes intersectionalities of inequity (e.g., race/ethnicity, gender, disability, nationality, sexual orientation, spirituality, immigration, etc.) (15, 16).

While understanding how anti-Asian discrimination impacts health is a critical need for Asian American health research, there is limited data available on these subjects, especially through large population health surveys. In response to this critical need during the pandemic, an Asian American and Native Hawaiian & Pacific Islander (AANHPI) COVID data module (17) was included in the 2020 California Health Interview Survey (CHIS), a population-representative state health survey (18). Co-developed with the UCLA Asian American Studies Center, the module includes questions on the frequency of hate incidents experienced and witnessed, and type of hate incidents. This module offers a unique measurement opportunity not found in other population surveys; experiences of a hate incident can be associated with a multitude of health outcomes, health access, and perceived neighborhood quality and safety outcomes. As part of the CHIS general survey, CHIS also collected data on unfair treatment due to race/ethnicity experienced during COVID-19. This question adds another dimension of anti-Asian discrimination experienced by the Asian community in California, the state with the greatest number (over 6 million) of the single race Asian population in the United States (19). Asians represent about 15% of the California population, compared with about 6% of the total US population (19).

In this paper, we are most interested in the “discordant” group of Asian adults who experienced a hate incident, but who reported not being treated unfairly. An individual could also report no hate incident experienced but report being treated unfairly. There are multiple domains of unfair treatment that do not manifest in directly experiencing a hate incident—such as physical or verbal abuse. The literature has established the effects of unfair treatment on health and mental health among Asian Americans (20), but the focal relationship of experiencing a hate incident is rarely measured in population



health surveys and thus represents our study's new contribution. We posit that the reporting discordance of unfair treatment despite having experienced a hate incident may lead to greater internalizing behaviors associated with negative health behaviors and outcomes such as poor mental health, forgoing medical care, increased conflicts in the home, and lower perceived neighborhood safety.

Methods

Data and sample

To assess differential measurement of discrimination among the same research sample, we used the 2020 CHIS's AANHPI COVID-19 Module restricted file (17). This module was administered to CHIS adult respondents that reported any mention of "Asian" for race and conducted in English, Cantonese, Mandarin, Korean, Vietnamese and Tagalog. CHIS is a population-based multimode survey of California's residential, non-institutionalized population conducted every other year since 2001 and continually beginning in 2011. CHIS is one of the largest state-level health surveys representing over 20,000 households annually and collects information on adults, adolescents, and children (18). For more information on the main CHIS survey, please see www.chis.ucla.edu. CHIS typically surveys over 2,500 Asian adults in a given year, but since the AANHPI COVID-19 module was developed after the March 2020 stay-at-home orders in California and fielded beginning

July 2020, the Asian sample in this study is a subset of the CHIS annual Asian sample ($n = 700$).

Measures

Our choice of measures were guided by our conceptual framework (Figure 1) and measure availability in the AANHPI COVID-19 module restricted file.

Outcome variables

Serious psychological distress in the past month is a dichotomous variable based on the Kessler 6-item psychological Distress Scale (K6) with a maximum score of 24 and a minimum score of 0. "Serious levels of psychological distress" were scores at or above 13 and "no serious psychological distress" was defined as scores below 13.

Forgoing needed medical care in the past 12 months is a dichotomous variable indicating whether or not adults had to forgo necessary medical care. This variable was constructed using two CHIS questionnaire items. Individuals who reported that they delayed care in the past 12 months and that they did not get the care eventually were categorized as forgoing necessary care.

Increased household personal conflict is a constructed variable derived from the question, "During the stay-at-home orders connected to the COVID-19 outbreak, was there

an increase in your household of any of the following?” that included the options, “interpersonal conflict with family members or loved ones,” “snapping at or yelling at family members or loved ones,” “physical punishment of family members or loved ones,” and “none of these.” Individuals who reported having “interpersonal conflict with family members or loved ones” were considered to have experienced increased household interpersonal conflict.

Feeling unsafe in neighborhood is a constructed variable derived from the question, “Do you feel safe in your neighborhood?” Individuals who reported feeling safe in their neighborhood “some of the time” and “none of the time” were categorized as feeling unsafe in their neighborhood.

Main predictor of interest

Our main predictor of interest is the extent of discordance of reporting experiencing hate and race-based unfair treatment. Reporting “discordance” is defined as reporting an experience of a hate incident, but not reporting an experience of unfair treatment. Reporting “concordance” is defined as reporting an experience of a hate incident and also reporting an experience of unfair treatment.

In the CHIS COVID-19 module, respondents were asked a multi-select question with a write-in option, “Have you experienced any of the following situations because of the coronavirus or COVID-19 outbreak?” which included the option, “I’ve been treated unfairly because of my race/ethnicity.” Individuals who indicated this option were treated as having experienced unfair treatment due to their race/ethnicity. Respondents who identified as Asian, Native Hawaiian and/or Other Pacific Islander (NHPI) were also asked to respond to the statement, “Over the past 12 months, have you experienced any of the following situations because of the Coronavirus or COVID-19 outbreak?” followed up with the question, “I have directly experienced a hate incident due to the Coronavirus.” Individuals who responded affirmatively to the statement were treated as having experienced a hate incident in the past 12 months. Responses that were “not ascertained” and “I don’t know” ($n = 54$; 7.7% of sample) were treated as zeroes and as neither experiencing unfair treatment nor experiencing a hate incident. For this analysis, we focused on Asian respondents.

Covariates

Asian subgroups were categorized as “East Asian,” “Southeast Asian,” “South Asian,” and “Other or Multiple Asian” using the NHPI and Asian subgroups variable. “East Asian” included individuals who identified as “Chinese,” “Japanese,” and “Korean.” “Southeast Asian” included individuals who identified as “Filipino,” “Vietnamese,” and “Southeast Asian.” “South Asian” included individuals who identified as “South Asian.” “Other or Multiple Asian” included individuals

who indicated “other” or “belonging to two or more Asian subgroups.” Individuals who identified as “Native Hawaiian and/or Pacific Islander” only were excluded from analysis. Multiracial Asians were assigned to their single race Asian category they selected.

Age group was categorized using the survey vendor age continuous variable to reflect the following four categories: “18 to 25,” “26 to 39,” “40 to 64,” and “65 years old and older.”

Gender is a binary (male or female) constructed variable from the CHIS gender identity question, which accounts for “male,” “female,” “transgender,” or “none of these.” “Transgender” or “none of these” options are imputed as either “male” or “female” by the CHIS survey vendor.

English proficiency was defined from a CHIS 4-level variable redefined into a dichotomized variable: individuals who responded as “not well” or “not at all” were considered to have limited English proficiency, while individuals who responded “well” or “very well” were considered English proficient.

Immigrant status was assessed using the CHIS 3-level constructed variable with the following categories: “US-born citizen,” “Naturalized citizen,” and “Non-citizen.” An individual is considered an immigrant if they responded “Naturalized citizen” or “Non-citizen.”

Income as a percentage of the federal poverty level (FPL) was dichotomized using the FPL thresholds into “<100% FPL” and “100% FPL and higher.”

Educational attainment was assessed using CHIS 9-level variable constructed into a dichotomized variable: “less than a bachelor’s degree” and “bachelor’s degree or higher.”

Analysis

We conducted weighted descriptive and multivariate analyses, and computed post-estimation adjusted relative risks (RR). In our multivariate logit models, we assessed the association of reporting discordance on (1) serious psychological distress, (2) forgoing needed medical care (3) increased household interpersonal conflict during COVID-19, and (4) feeling unsafe in their neighborhood. The multivariate models were adjusted for Asian subgroup, age, gender, immigrant status, education level, poverty, and English proficiency. Significance was assessed at the $\alpha = 0.05$ level. Sample weights were employed to account for complex sampling design and to calculate accurate variance estimations. All analyses were performed using Stata version 16.1.

Results

Among Asian adults, 6.4% reported experiencing a hate incident and 4.4% of Asians reported being unfairly treated due to race or ethnicity. Of those who reported experiencing

a hate incident, a majority (62.4%) reported not experiencing unfair treatment due to race or ethnicity. [Table 1](#) displays sample characteristics stratified by the discordant group, concordant group, and the group that did not report experiencing a hate incident. Within the discordant group, 22.1% reported high levels of psychological distress, 25.0% reported forgoing necessary medical care, 23.5% reported increased household interpersonal conflicts, and 28.0% reported feeling unsafe in their neighborhood. A majority of the discordant group identified as Southeast Asian (72.7%), despite the fact that Southeast Asians represented only 39% of the overall sample. About half of the discordant group (50.3%) were between the ages of 40 to 64 years old. Most of discordant group members identified as female (62.6%), were English proficient (94.1%), identified as an immigrant (69.3%), reported an income at or above 100% FPL (85.5%), and obtained a bachelor's degree or higher (70.6%).

[Table 1](#) further shows that within the concordant group, 29.0% experienced serious psychological distress, 15.4% forgone necessary medical care, and 46.3% experienced increased household interpersonal conflicts. No participants within the concordant group reported feeling unsafe in their neighborhood. A majority of the concordant group identified as East Asian (69.4%), though East Asians only represented 42.2% of the overall sample. A majority of the concordant group identified as ages 18–25 (55.2%), identified as female (57.7%) and an immigrant (55.4%), had an income at or above 100% FPL (88.1%), and obtained a bachelor's degree or higher (78.3%). All respondents in the concordant group reported high English proficiency (100.0%). Sample characteristics displaying row percentages by extent of discordance for each outcome and covariate can be found in the [Appendix](#).

[Table 2](#) shows the results of the multivariate logistic regression models. Compared to Asian adults who did not report experiencing a hate incident, the discordant group was 6.9 times more likely to experience severe psychological distress ($RR = 6.93$; $p < 0.001$), 2.7 times more likely to forgo necessary medical care ($RR = 2.69$; $p = 0.014$), 2.7 times more likely to experience increased household interpersonal conflicts ($RR = 2.66$; $p < 0.001$), and 3.5 times more likely to feel unsafe in their neighborhood ($RR = 3.48$; $p < 0.001$), on average, holding all else constant.

The concordant group was found to be 2.6 times more likely to have increased household interpersonal conflicts ($RR = 2.58$; $p = 0.014$) compared to individuals who did not report experiencing a hate incident, on average, holding all else constant. The concordant group did not post statistically significant effects for severe psychological distress ($p = 0.121$) nor forgoing necessary medical care ($p = 0.694$) compared to the group who did not report experiencing a hate incident. There were zero observations in the concordant group who reported feeling unsafe in their neighborhood.

Discussion

During the course of the COVID-19 pandemic in 2020, our study found that most Asians reporting a hate incident did not report race-based unfair treatment, and it is this group that is most affected by the harmful consequences of experiencing a hate incident, psychologically and socially. This suggests a significant discordance between respondents' reporting of experiencing hate incidents and recognition of unfair treatment based on race/ethnicity. The concordant and discordant groups showed similar effect sizes for increased interpersonal conflicts in the multivariable models, but the discordant group reported significantly worse severe psychological distress, forgoing of necessary care, and feeling unsafe in their neighborhoods when compared to Asians not experiencing a hate incident. The factors that drive the disconnect between experiences of hate incidents and lack of recognition of discriminatory events as unfair treatment, the social context that allow such factors to develop in the first place, and the impacts of this reporting discordance on health and wellbeing, altogether, represent important concepts to assess further.

In our sample, the discordant group vs. the concordant group displayed several key demographic differences worth further exploration and explanation. The discordant group had higher percentages of Southeast Asians, respondents ages 40–64 and 65+, and respondents experiencing poverty. The concordant membership included higher percentages of East Asians, respondents ages 18–25, and respondents at or above 100% FPL. These represent intersectionalities that have effects that may be missed by traditional regression analysis. We posit that sociopolitical conditions, migration patterns, cultural norms for coping (e.g., adaptive skills, internalization) and mental health (e.g., stigma), and intergenerational effects may be moderating drivers for the discordant group. For example, young adults may be more keenly aware of the various types of discrimination and become more empowered by their social networks to report or reflect on their experiences. Conversely, older adults may have developed maladaptive coping mechanisms compounded overtime, which may have resulted in further detachment and passive coping skills. Regardless of discordance or concordance, in this population-based sample, gender-based differences were observed in reports of experiencing a hate incident (53.4% females vs. 46.6% males), which is consistent with Stop AAPI Hate reports where over 63% of hate incidents were reported by women (21). Importantly, our study shows a higher proportion of females vs. males are in the discordant group, suggesting possible under-reporting of hate incidents inflicted against Asian women. Due to gendered racialization, the intersectional experiences of Asian women subject them to increased oppression and marginalization (e.g., hyper-sexualization, fetishization, stereotypic depictions

TABLE 1 Hate incidents experienced and unfair treatment, Asian adults, California health interview survey AANHPI COVID-19 module 2020.

	Experienced a hate incident				
	All		Discordant	Concordant	No hate incident experienced
	Observations	Weighted %	Weighted %	Weighted %	Weighted %
Serious psychological distress					
Yes	37	5.6%	22.1%	29.0%	4.3%
No	663	94.4%	77.9%	71.0%	95.7%
Forgone needed medical care					
Yes	67	9.9%	25.0%	15.4%	9.2%
No	633	90.1%	75.0%	84.6%	90.8%
Increased household interpersonal conflicts					
Yes	90	12.5%	23.5%	46.3%	11.1%
No	610	87.5%	76.5%	53.7%	88.9%
Feeling unsafe in neighborhood					
Yes	64	10.2%	28.0%	0.0%	9.7%
No	636	89.8%	72.0%	100%	90.3%
Asian subgroup					
East Asian	335	43.2%	23.8%	69.4%	43.4%
Southeast Asian	266	39.0%	72.7%	17.2%	38.1%
South Asian	64	13.6%	0%	13.3%	14.2%
Other Asian/Two or more Asian	35	4.1%	3.5%	0.0%	4.3%
Age group					
18–25	71	14.0%	8.1%	55.2%	13.2%
26–39	175	25.0%	11.3%	19.1%	25.8%
40–64	307	42.2%	50.3%	23.7%	42.3%
65+	147	18.8%	30.3%	2.0%	18.7%
Gender					
Female	375	53.4%	62.6%	57.7%	52.9%
Male	325	46.6%	37.4%	42.3%	47.1%
English proficiency					
Limited	82	16.0%	5.9%	0.0%	16.9%
Proficient	618	84.0%	94.1%	100%	83.1%
Immigrant status					
Immigrant	466	72.0%	69.3%	55.4%	72.6%
Not an immigrant	234	28.0%	30.7%	44.6%	27.4%
Income as % FPL					
<100% FPL	66	11.2%	14.5%	11.9%	11.0%
100% FPL and higher	634	88.8%	85.5%	88.1%	89.0%
Educational attainment					
BA/BS or higher	491	60.2%	70.6%	78.3%	59.3%
Less than BA/BS	209	39.8%	29.4%	21.7%	40.7%
Observations	700		33	14	653

“Other Asian/Two or more Asian” category includes single race groups that responded “yes” to Asian, but “Other” in the subgroup follow-up question and two or more Asian groups. Multiracial Asians were assigned to the single race Asian category.

TABLE 2 Relative risk of selected outcomes by discordant reporting of hate incident experience and unfair treatment, Asian adults, California health interview survey AANHPI COVID-19 module 2020.

	Severe psychological distress			Forgone necessary care			Increased household interpersonal conflicts			Feeling unsafe in neighborhood		
	RR	<i>p</i> -value	[95% CI]	RR	<i>p</i> -value	[95% CI]	RR	<i>p</i> -value	[95% CI]	RR	<i>p</i> -value	[95% CI]
Discordance												
Discordant	6.93	<0.001**	[3.30, 14.54]	2.69	0.014*	[1.23, 5.91]	2.66	<0.001**	[1.50, 4.70]	3.48	<0.001**	[1.80, 6.72]
Concordant	3.00	0.121	[0.75, 12.05]	1.37	0.694	[0.29, 6.43]	2.58	0.014*	[1.21, 5.49]	—	—	—
No hate incident	1			1			1			1		
Asian subgroup												
East Asian	1			1			1			1		
Southeast Asian	1.18	0.660	[0.57, 2.46]	0.69	0.270	[0.36, 1.33]	0.41	0.002*	[0.23, 0.71]	0.71	0.219	[0.41, 1.23]
South Asian	1.08	0.912	[0.28, 4.15]	0.82	0.689	[0.32, 2.14]	0.83	0.565	[0.43, 1.58]	1.98	0.067	[0.95, 4.11]
Other Asian/Two or more Asian	1.27	0.731	[0.32, 5.03]	0.85	0.810	[0.24, 3.08]	0.76	0.541	[0.31, 1.85]	0.53	0.405	[0.12, 2.36]
Age group												
18–25	11.66	<0.001**	[4.22, 32.20]	1.13	0.805	[0.44, 2.92]	1.20	0.562	[0.65, 2.21]	0.69	0.437	[0.28, 1.75]
26–39	3.11	0.016*	[1.24, 7.82]	0.27	0.010*	[0.10, 0.73]	0.88	0.621	[0.52, 1.47]	0.54	0.129	[0.24, 1.20]
40–64	1			1			1			1		
65+	0.77	0.759	[0.15, 4.06]	0.83	0.636	[0.37, 1.83]	0.04	<0.001**	[0.01, 0.18]	0.65	0.360	[0.26, 1.64]
Gender												
Female	1.10	0.814	[0.50, 2.42]	1.95	0.034*	[1.05, 3.62]	1.41	0.132	[0.90, 2.20]	0.99	0.971	[0.58, 1.69]
Male	1			1			1			1		
English proficiency												
Limited	2.10	0.115	[0.84, 5.29]	1.37	0.452	[0.60, 3.15]	0.40	0.221	[0.09, 1.73]	1.83	0.185	[0.75, 4.45]
Proficient	1			1			1			1		
Immigrant status												
Immigrant	0.96	0.920	[0.40, 2.29]	0.78	0.491	[0.39, 1.58]	0.44	<0.001**	[0.28, 0.70]	0.68	0.255	[0.35, 1.32]
Not an immigrant	1			1			1			1		
Income as % FPL												
<100% FPL	0.45	0.295	[0.10, 1.99]	0.74	0.526	[0.29, 1.89]	0.70	0.383	[0.31, 1.57]	2.19	0.059	[0.97, 4.95]
100% FPL and higher	1			1			1			1		
Educational attainment												
BA/BS or higher	0.78	0.497	[0.38, 1.61]	0.88	0.699	[0.47, 1.65]	0.72	0.257	[0.41, 1.27]	0.63	0.200	[0.31, 1.28]
Less than BA/BS	1			1			1			1		
Observations	700			700			700			686		

p* < 0.05, *p* < 0.001. “Other Asian/Two or more Asian” category includes single race groups that responded “yes” to Asian, but “Other” in the subgroup follow-up question, as well as two or more Asian. The association between Concordant group with Feeling Unsafe in Neighborhood predicted failure perfectly, therefore these 14 observations were dropped. FPL, Federal Poverty Level.

of subservience and passiveness), rendering them invisible and disposable in the broader American racial hierarchy. Furthermore, all concordant group members reported feeling safe in their neighborhood, perhaps implicating the role of social support and community connectedness in buffering against the deleterious effects of race-based hate and in empowering others to actively recognize unfair treatment, which coincides with cognitive theorists’ hypotheses that associate social support and psychological resources with lesser discrimination-related stress (22, 23).

Existing theories from the public health literature are worth considering to build plausible explanations and models around Asian discrimination discordance. Minority stress theory (24) provides a conceptual framework on how experiences of discrimination (i.e., external oppression) and internalized negative feelings around one’s own minority group or identity (i.e., internal oppression) promote poor mental health issues among people of color and minoritized groups. One pathway (25, 26) suggests that external oppression leads to psychological distress by internalized oppression. Inspired

by multicultural-feminist scholars (27), another association posits multiple oppressions (e.g., racism and xenophobia, racism and colonialism, racism and sexuality) fuse together to form individual's experiences of discrimination, manifesting as poor mental health or other inadvertently self-deprecating or self-sabotaging behaviors (e.g., delaying or avoiding health care services). All types of hate and unfair treatment, along with other forms of oppressed experiences exist, operate, and reproduce each other across and within the various socioecological levels to cause harmful and negative outcomes (Figure 1).

In this current study, it is possible that the discordant group may be experiencing higher levels of serious psychological distress than the concordant group due to higher utilization of avoidant coping strategies, such as tolerating years or high frequency of unfair treatment as it relates to moral injury or distress often experienced by among minoritized or racialized individuals (8). Race-based traumatic stress theory, derived from counseling psychology, indicates that racial and ethnic minorities experiencing racial discrimination may evoke symptoms and reactions comparable to that of post-traumatic stress disorder (28, 29). Trauma-exposed individuals are more likely to engage in passive and/or avoidant coping strategies to manage overwhelming distress through cognitive avoidance or emotional numbing. Studies reveal that those with passive and/or avoidant coping strategies in response to racial discrimination (e.g., keeping it to themselves or normalizing not reporting it) demonstrate deleterious impacts on negative psychological health and increased dissociative symptoms (i.e., momentary memory lapses memory or awareness; surrounding distortions) (30, 31). Given that the discordant group were more likely to report feeling unsafe in their neighborhood and forgoing necessary medical care, they may subscribe to avoidant strategies in the absence of social and community support, especially from employer leadership during the pandemic.

Moreover, the learned helplessness hypothesis (32) suggests that individuals continuously exposed to aversive stimuli may become conditioned to believe that their negative situations are uncontrollable or inescapable, resulting in an unwillingness to try and change their circumstance. It is possible that individuals in our discordant group were exposed to racial discrimination and other forms of oppression resulting in feelings of helplessness and a resignation to resolve these negative situations due to no direct, positive impacts for the victim. Feelings of helplessness may then mediate the relationship between racial discrimination and elevated mental distress (33).

However, beyond these psychological and public health theories, it is imperative that researchers engage with other social science fields (i.e., history, sociology, anthropology, and ethnic studies), which are rich in theoretical backgrounds that may fill gaps to better understand anti-Asian racism. For example, Asian American studies and ethnic studies can

provide clarity into the fuller context (e.g., social, political, cultural, economic, historical, etc.) around anti-Asian hate to better inform health-related work. Greater recognition of the importance of ethnic studies in understanding health outcomes are already taking place as it pertains to health education and health policy (34), and similar perspectives would also apply to the development of research questions and interpretations of analyses. Relevant to the work here, prior work from Asian American Studies examined anti-Asian violence using a variety of qualitative and thematic perspectives, including racial categorizing and racialization of Asians, nativism, patriotic racism, racial hierarchization, and subsequent interracial conflict (35). As such, if we aim to understand various pathways into discordant behavior as well as contribute substantively to broader academic work on anti-Asian hate, active engagement with other fields is not only a complementary addition to this evolving work, but increasingly necessary to dismantling structural racism.

Moving beyond the academic and into policy considerations, the state's ability to appropriately capture anti-Asian sentiment in public data as well as adequately direct resources that provide deterrence and mitigation is under criticism both, before and during COVID-19, leading non-governmental efforts to document hate-motivated behaviors (21). While efforts like Stop AAPI Hate are critical for recognizing increased burdens of hate incidents, public statistics collected by state and federal organizations carry unique weight, including in broadly guiding recognition of these issues and supporting as well as securing funding and investment. However, there are a few notable issues with Asian hate crime reporting. Asians are less likely to report hate crimes compared to other victims. Prior work has also demonstrated substantial misalignment between experience of hate-motivated behavior and actual recognition of hate crimes in federal databases, driven by not only gaps in reporting of incidents to police but subsequent registration of hate crime incidents by police (4, 13, 36). There is also some conceptual differences between experiences of anti-Asian violence and discrimination vs. the actual classification of such events as bias incidents vs. hate crimes, adding further complexity to discussions about how anti-Asian sentiment manifests itself as distinct occurrences of discrimination. Our work provides an approximation of the magnitude of the under-reporting of hate crimes: of Asian adults who said they experienced a hate incident, about 62% did not declare that they had experienced unfair treatment. Without the recognition of the hate incident as unfair treatment, we suggest that individuals may not feel compelled to take action against the hate incident by reporting it to the police. Several factors described earlier (lack of awareness, normalizing scapegoating, desire to avoid unwanted attention) serve to explain the potential reasons why Asians are not recognizing these hate incidents as unfair (13).

Limitations

There are a few limitations of this research. First, these analyses are cross-sectional and interpretations are associations, not casual links. Second, the question on unfair treatment was not conditional on reporting experiencing a hate incident, although the questions were adjacent in the CHIS COVID-19 modules. Third, the question on experiencing a hate incident did not directly ask if it was due to race/ethnicity; however, this question was asked during a timeframe in which race-based discrimination and hate crimes toward Asians were on the rise. Second, this study was conducted only in California. Patterns of anti-Asian hate as well as subsequent impacts may differ in other states. Third, given that the AANHPI COVID-19 module was administered in the middle of 2020 following the initial public health declarations of COVID-19 as a pandemic, the CHIS 2020 sample size used was limited, providing a key barrier in generating insights for Asian subgroups, an important component of appropriately contextualizing health needs (11, 12, 37). While preliminary results showed differences among East and Southeast Asians, subgroup-based analyses will provide far richer insights based on each individual group's needs.

The 2021 AANHPI COVID module will be available in the fall of 2022 with an expected sample of around 4,000 adults. Further work should examine the association of experiences of hate and unfair treatment with outcomes with increased sample size to ensure appropriate analytical power for Asian subgroup analyses. Other work should consider the ways the state and federal government collect data on anti-Asian hate, which mostly consists of recording hate crimes, as well as how current infrastructures fail to recognize, mitigate, and deter anti-Asian hate. Asians are less likely to report hate crimes to the police (13); this fact is a key driver and consequence of public policies doing too little or too late in appropriately combating anti-Asian hate.

While state resources should be invested in more comprehensive public reporting infrastructure, investment in community organizations that support minorities and Asians should be considered vital for combating anti-Asian racism. Community organizations and/or religious institutions play an important, supportive role in the lives of their ethnic members on an everyday basis and, indeed, in the aftermath of a hate incident. California could serve as a model with its \$156.5 million investment to measure and address systemic discrimination and rising hate incidents against AAPI communities. On July 13, 2021, Governor Newsom signed the historic Asian and Pacific Islander (API) Equity Budget, sponsored by the California API Legislative Caucus. Investments include data collection efforts (including continuing to support an AANHPI module in CHIS in 2022), and community-based services to address systemic racism and discrimination in the AANHPI communities. Federally and

for other states, California's explicit agenda to stop anti-Asian hate should be modeled and upheld in advocacy, research and policy-making (38).

Data availability statement

The data analyzed in this study is subject to the following licenses/restrictions: The dataset is a restricted file that can be accessed by an application to the CHIS Data Access Center. Requests to access these datasets should be directed to dacchpr@em.ucla.edu.

Ethics statement

The studies involving human participants were reviewed and approved by the UCLA IRB Data Access Center Protocol: Title: California Health Interview Survey Data (CHIS) Data Access Center (DAC) Number: IRB#11-002227. The patients/participants provided their written informed consent to participate in this study.

Author contributions

NP, AA, and RB conceptualized the manuscript. NP acquired access to the restricted AANHPI COVID-19 module file and led the study design and statistical analyses supported by RB and ST. MS-L, RB, AA, and NP contributed to the introduction and discussion sections. MS-L led the development of the conceptual framework and RB and ST led the write-up of the methods and results section. All authors co-edited, reviewed, and approved the final manuscript.

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Conflict of interest

At time of submission, AA was employed by Precision Advisors, a for-profit healthcare consulting firm.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Experiencing, anticipating, and witnessing discrimination during the COVID-19 pandemic: Implications for health and wellbeing among Asian Americans

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The onset of the COVID-19 pandemic spurred increased racial animus toward Asians and Asian Americans (A/AA) who have since been contending with increased racism and violence. While some of the harm associated with this increased prejudice may derive from personally experienced discrimination, the COVID-19 pandemic has also been marked by an increase in vicarious exposure to discrimination as well as increased anticipation of discrimination, both of which may be taxing for the mental and physical health of A/AA. The goal of this study, accordingly, was to examine the effects of personal experiences of discrimination, vicarious exposure to discrimination, and anticipated discrimination on depressive symptoms, physical health symptoms, sleep quality, and sleep disturbances among A/AA. Results from our two-wave field survey demonstrated that experiencing and anticipating discrimination were associated with mental and physical health symptoms as well as sleep disturbances. Further, personal experiences of discrimination interacted with vicarious discrimination to determine physical health symptoms such that greater vicarious exposure weakened the relationship between experienced discrimination and physical health symptoms. These findings demonstrate the need to mobilize resources to combat the multipronged, negative implications of the recent rise in anti-Asian prejudice during the COVID-19 pandemic.

KEYWORDS

Asian Americans, COVID-19, discrimination, vigilance, health

Introduction

Since the onset of the COVID-19 pandemic, reports of discrimination and violence against Asians and Asian Americans (A/AA) have increased substantially across the United States (1, 2). Although overall hate crimes decreased by 7% nationwide, hate crimes targeting A/AA rose by 150% in 2020 and further increased

in 2021 (2, 3). More than 10,000 hate crimes were self-reported during this same time period (2). Further, roughly 39% of A/AA reported experiencing discrimination at least sometimes or often during the pandemic and more than half of A/AA reported feeling unsafe in public due to their race/ethnicity (4).

Although discrimination toward A/AA has a long history in the United States, the inflammatory rhetoric linking the origin of the novel coronavirus to China contributed to a further rise in discrimination among A/AA which has important implications for health outcomes. Specifically, studies have indicated that derogatory names used in place of COVID-19 in mainstream media messaging as well as on social media are associated with prejudice toward A/AA (1, 5–7). Researchers have also observed “spillover” effects in which discrimination is targeted at other A/AA groups beyond Chinese Americans (5, 8). Yet, limitations in data reporting on A/AA have complicated our ability to understand the full scope of health and social threats faced by A/AA and it is likely that current estimates of hate crimes are an undercount (9).

Although data are limited on the health implications resulting from the rise in A/AA discrimination, extant empirical evidence confirms the linkage between experiencing discrimination among A/AA during the COVID-19 pandemic and a range of mental health outcomes, including PTSD diagnoses (10), depressive symptoms (11), and sleep quality (12). These findings comport with more general evidence documenting the psychological and physiological effects of experiencing discrimination. Indeed, the well-known weathering hypothesis (13) suggests that long term exposure to discrimination and various forms of social disadvantage contributes to accelerated biological aging and a higher chronic disease burden [e.g., (14)]. Importantly, even more subtle or chronic forms of interpersonal discrimination, such as microaggressions and displays of favoritism, may trigger this physiological stress response which over time can degrade health status, increasing rates of hypertension and both maternal and infant mortality (15, 16), among other conditions. These figures suggest that direct experiences of discrimination incurred by A/AA during the COVID-19 pandemic likely contribute to significant short and long-term health consequences, above and beyond the threats posed by the pandemic itself.

There may be other ways, however, that periods of increased racial animus, such as what has been observed in response to the COVID-19 pandemic, can shape the health of A/AA. That is, the acute rise in anti-Asian discrimination not only increased the likelihood that A/AA will experience discrimination directly but may have also heightened vicarious exposure to discrimination as well as anticipation of discrimination. Vicarious exposure to discrimination can occur through witnessing discrimination targeted at other A/AA while in public, hearing experiences detailed by friends or

family members, or reading about violence and discrimination targeting A/AA in the news. Being aware of these events and the general rise in anti-Asian sentiment can then also spur increased vigilance, or a heightened anticipation that one may also become a target of anti-Asian discrimination. In this paper, we argue that vicarious discrimination and the anticipation of discrimination may each uniquely contribute to ill health among A/AA, above and beyond personal experiences of discrimination.

Prior empirical evidence supports the linkage between vicarious exposure to discrimination and adverse health outcomes. Studies suggest that witnessing discrimination directly, or living in communities with high levels of discrimination, also contributes to poor health through activating the stress process. For example, living in areas with higher rates of hate crimes is associated with poor physical health outcomes, including hypertension, diabetes, and obesity (17). Similarly, witnessing discrimination during childhood has been linked to a broad array of socioemotional and mental health consequences (18). Extant research on vigilance demonstrates that anticipating discrimination is associated with sleep impairment (19), obesity (20), and depressive symptoms (21).

The goal of the current study is to examine how experienced discrimination, vicarious discrimination, and vigilance during the COVID-19 pandemic relate to mental health and physical health symptoms, and indices of sleep using a two-wave field survey of A/AA. The current study makes three primary contributions. First, we contribute to the small but growing body of literature on the health decrements associated with vicarious discrimination and vigilance. These novel forms of discrimination are important given the profound health inequities observed across racial/ethnic groups in the U.S. Second, studies on the health consequences of interpersonal discrimination have commonly centered around Black and Latinx Americans, long overlooking the experiences of other racial/ethnic minorities in the United States, including A/AA. Scholars point to the “model minority myth” which suggests that A/AA are universally successful and free of problems, contributing to a tendency to discount discrimination and its consequences among this group (22, 23). Third, this study examines health outcomes associated with different forms of discrimination during the COVID-19 pandemic, a period in which marked increases in interpersonal violence toward A/AA were documented (24, 25).

Method

Data were collected from people who identified their race/ethnicity as Asian American, were 18 years of age or older, and resided within the United States at the time of

data collection. Participants were recruited through Qualtrics Panels, which is a third-party research firm that connects eligible participants to research surveys. Qualtrics Panels utilizes existing survey platforms to recruit participants who meet specified criteria. As such, our participants were limited to registered members of existing online research platforms. In addition to the eligibility criteria listed above, we also recruited a sample that was geographically dispersed across the United States and balanced in terms of sex at Time 1. The data collection occurred in April 2021 and participants were asked to complete two surveys that were separated by ~1 week of time. A time lag was implemented to reduce concerns about common method variance, which can upwardly bias correlations between/among measures collected at the same time (26). The Time 1 survey contained measures of experienced discrimination, vicarious exposure to discrimination, vigilance, and participant demographics. The Time 2 survey contained the outcome measures, which included mental health, physical health, sleep quality, and sleep disturbances.

A total of 401 eligible participants provided data at Time 1 and 311 of those participants also provided data at Time 2. Among participants who completed both surveys, the average age was 33.38 ($SD = 8.50$) and approximately half identified as women (50.2%). The majority of respondents identified their gender as cisgender, with only two participants identifying as transgender or genderqueer. The most commonly reported sexual orientation was heterosexual (92.3%) followed by bisexual (3.5%), other (2.3%), and gay/lesbian (1.9%). To assess for nonresponse bias, we conducted a series of *t*-tests that compared participants who completed both surveys to those who only completed the Time 1 survey on age, sex, work hours, experienced discrimination, vicarious discrimination, and vigilance. Results indicated no significant differences between groups.

Measures

Experienced discrimination (T1)

We measured experiences of racial discrimination since the onset of the COVID-19 pandemic using the Everyday Discrimination Scale [(27); $\alpha = 0.96$]. This measure contains 9 items that ask about experiences of discrimination that can occur in a variety of commonplace interactions and contexts, such as when someone is in public or in restaurants. The measure was developed for use with a variety of social groups and has been used with Asian Americans in prior research (28, 29). An example item is, “You were treated with less courtesy than other people were.” The response scale ranged from 1 (*never*) to 6 (*almost every day*) and a scale score was created by taking an average across all items.

Vigilance (T1)

Participants were also asked to report their vigilance, or the degree to which they have anticipated and/or tried to prepare for experiences of racial discrimination, since the onset of the COVID-19 pandemic. We used Hicken et al. (20)’s 4-item measure of vigilance and adapted the scale to be specific to experiences of anti-Asian racial discrimination. The modifications aligned with another recent study which examined vigilance among Asian Americans (30). An example item is, “Try to prepare for possible racial insults from other people before leaving home.” Participants rated the frequency with which they experienced vigilance on a scale ranging from 1 (*never*) to 6 (*almost every day*) and a scale score was created by taking an average across all items. The scale demonstrated good reliability in the current sample ($\alpha = 0.88$).

Vicarious discrimination (T1)

Participants were finally asked to report on their experiences of vicarious discrimination, or instances in which they witnessed or learned about other A/AA experiencing racial discrimination, since the onset of the COVID-19 pandemic. Vicarious discrimination was measured using an adapted version of the 3-item Vicarious Racism Scale developed by Martz et al. (31). The original items were modified to be specific to acts of anti-Asian racism and/or violence. A recent study found this measure was appropriate for use with Asian Americans and Pacific Islanders (32). An example item from the adapted scale is, “Seeing other people in public being treated unfairly because they are Asian.” Participants indicated the frequency with which they had been exposed to each form of vicarious racism on a scale ranging from 1 (*never*) to 6 (*almost every day*) and a scale score was created by taking an average across all items. The modified scale demonstrated adequate reliability ($\alpha = 0.71$).

Depressive symptoms (T2)

At Time 2, participants were asked to report on several indicators of their health and wellbeing. The first indicator was the degree to which they had experienced symptoms commonly associated with depression. Depressive symptoms were measured using the shortened Patient Health Questionnaire [PHQ-9; (33)]. This measure is often used in clinical contexts as a brief but effective way to screen for depression. The measure typically contains 9 items, but we used an 8-item version of the scale that removed the single item that asked about suicidality. The retained items ask about typical symptoms of depression, such as experiencing a loss of interest in activities and feeling hopeless. Participants were asked to indicate how bothered they were by those symptoms since completing the Time 1 survey on a scale from 0 (*not at all*) to 3 (*nearly every day*) and a scale

score was created by taking an average across all items. The scale demonstrated good reliability ($\alpha = 0.90$).

Physical health (T2)

Participants were next asked about their physical health using the Physical Health Questionnaire [(34); $\alpha = 0.89$]. The Physical Health Questionnaire contains a series of physical health symptoms that are commonly associated with somatic reactions to stressful experiences, such as headaches and gastrointestinal symptoms. The scale consisted of 11 items containing physical health symptoms and response options ranged from 1 (*not at all*) to 7 (*all of the time*). A scale score was created by taking an average across all items.

Sleep (T2)

We next assessed participants' sleep in two different ways. First, we asked participants to rate their sleep quality using a single item (i.e., During the past week, how would you rate your sleep quality overall?). Second, we asked participants about their experiences of sleep disturbances. Participants were asked to indicate the frequency with which they experienced ten common types of sleep disturbances, including not being able to fall asleep and not being able to stay asleep. Response options ranged from 1 (*never*) to 4 (*three or four times per week*) and a scale score was created by summing the total number of sleep disturbances participants experienced. Both the sleep quality and sleep disturbance items were taken from the Pittsburgh Sleep Quality Index (35).

Analyses

Study hypotheses were tested using ordinary least squares multivariate regression. Each model included participant demographics (i.e., age, sex [coded 1 = male, 2 = female], sexual orientation [coded 1 = heterosexual, 2 = gay, lesbian, bisexual, or pansexual]) in Step 1 and the focal predictor variables (i.e., experienced discrimination, vicarious discrimination, vigilance) in Step 2, and separate models were conducted for each of the outcome variables. Demographics were included as control variables given prior evidence which suggests that health and wellbeing outcomes differ across demographic subgroups (36). Supplemental analyses were conducted to examine whether there were interactions between experienced discrimination and vicarious discrimination as well as between experienced discrimination and vigilance. Interactions were tested by computing product terms from the relevant variables and entering the product term in Step 3 of the regression model. To reduce concerns about multicollinearity, all continuous predictor variables were mean-centered and product terms were computed from the centered variables. Significant interactions

were interpreted by calculating the simple slopes for the relationship between one predictor variable and the outcome at one standard deviation above and below the mean of the second predictor variable (37).

Results

Descriptive statistics for the study variables are shown in Table 1. An examination of the correlations indicated that experienced discrimination was significantly positively related to depressive symptoms ($r = 0.31, p < 0.001$), physical health symptoms ($r = 0.32, p < 0.001$), and sleep disturbances ($r = 0.23, p < 0.001$). Vigilance was similarly related to depressive symptoms ($r = 0.35, p < 0.001$), physical health symptoms ($r = 0.38, p < 0.001$), sleep quality ($r = -0.21, p < 0.001$), and sleep disturbances ($r = 0.20, p < 0.001$). Finally, vicarious discrimination was also significantly related to all of the outcome variables (depressive symptoms: $r = 0.25, p < 0.001$; physical health symptoms: $r = 0.27, p < 0.001$; sleep quality: $r = -0.17, p = 0.003$; sleep disturbances: $r = 0.20, p < 0.001$). These results indicate that experiencing discrimination, anticipating discrimination, and being vicariously exposed to discrimination was associated with increased depressive symptoms, increased physical health symptoms, and increased sleep disturbances. Further, vicarious discrimination and vigilance were also associated with reduced sleep quality.

Regression analyses

Results for the regression models are shown in Table 2. Results for the first model, which included depressive symptoms as the outcome variable, demonstrated a significant negative relationship between depressive symptoms and age ($b = -0.01, 95\% \text{ CI } [-0.20, -0.002], p = 0.015$). There were also significant positive relationships between experienced discrimination and depressive symptoms ($b = 0.13, 95\% \text{ CI } [0.07, 0.19], p < 0.001$) as well as between vigilance and depressive symptoms ($b = 0.12, 95\% \text{ CI } [0.07, 0.17], p < 0.001$). However, the relationship between vicarious discrimination and depressive symptoms was not significant. This suggests that experienced discrimination and vigilance were both associated with increased depressive symptoms. The second model predicted physical health symptoms as the outcome variable. In Step 1, sex had a significant positive relationship with physical health symptoms ($b = 0.28, 95\% \text{ CI } [0.03, 0.53], p = 0.027$), indicating women reported more physical health symptoms than men. There were additionally significant positive relationships for experienced discrimination ($b = 0.22, 95\% \text{ CI } [0.12, 0.32], p < 0.001$) and vigilance ($b = 0.20, 95\% \text{ CI } [0.12, 0.29], p < 0.001$). However, there was again no significant relationship between vicarious discrimination and physical health symptoms. Results

TABLE 1 Reliabilities appear on the diagonal.

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	33.57	8.51										
2. Sex	1.50	0.50	−0.22*									
3. Sexual orientation	1.08	0.27	−0.13*	0.05								
4. Experienced discrimination	1.94	1.17	−0.10	−0.02	0.05	0.96						
5. Vigilance	3.28	1.57	−0.08	0.09	−0.03	0.29*	0.88					
6. Vicarious discrimination	3.06	1.21	−0.11	0.04	−0.02	0.38*	0.61*	0.71				
7. Depressive symptoms	1.91	0.65	−0.18*	0.12*	0.08	0.31*	0.35*	0.25*	0.90			
8. Physical health symptoms	3.07	1.09	−0.12*	0.15*	0.03	0.32*	0.38*	0.27*	0.66*	0.89		
9. Sleep quality	2.57	0.71	−0.01	0.00	−0.06	−0.10	−0.21*	−0.17*	−0.47*	−0.55*	—	
10. Sleep disturbances	22.14	6.69	0.03	0.06	−0.02	0.31*	0.23*	0.20*	0.60*	0.73*	−0.53*	—

N = 311; Sex is coded 1 = male, 2 = female; sexual orientation is coded 1 = heterosexual, 2 = gay, lesbian, bisexual, or pansexual; reliability coefficients are presented on the diagonal.
*p < 0.05.

TABLE 2 Experienced discrimination, vigilance, and vicarious discrimination predicting health and wellbeing outcomes.

Variable	Depressive symptoms			Physical health			Sleep quality			Sleep disturbances		
	B	SE	(Δ)R ²	B	SE	(Δ)R ²	B	SE	(Δ)R ²	B	SE	(Δ)R ²
Step 1												
Sex	−0.01*	0.01		−0.01	0.01		0.00	0.01		0.03	0.05	
Age	0.10	0.08		0.28*	0.13		0.00	0.08		0.80	0.78	
Sexual orientation	0.13	0.14		0.03	0.23		−0.17	0.15		−0.59	1.44	
			0.038			0.029			0.004			0.005
Step 2												
Experienced discrimination	0.13***	0.03		0.22***	0.05		−0.02	0.04		1.54***	0.33	
Vigilance	0.12***	0.03		0.20***	0.05		−0.08*	0.03		0.59*	0.29	
Vicarious discrimination	−0.01	0.04		0.00	0.06		0.04	0.04		0.11	0.39	
			0.160			0.177			0.049			0.120
Step 3												
Experienced discrimination × Vicarious discrimination	−0.03	0.03		−0.13**	0.05		0.01	0.04		−0.50	0.31	
Experienced discrimination × Vigilance	−0.02	0.03		−0.03	0.04		0.01	0.03		−0.23	0.26	
			0.010			0.030			0.001			0.017

N = 301 for the models predicting depressive symptoms, 308 for the models predicting physical health, sleep quality, and sleep disturbances; Sex is coded such that 1 = male and 2 = female; Sexual orientation is coded such that 1 = heterosexual and 2 = gay, lesbian, bisexual, or pansexual; All continuous predictor variables are mean centered.

* p < 0.05, ** p < 0.01, *** p < 0.001.

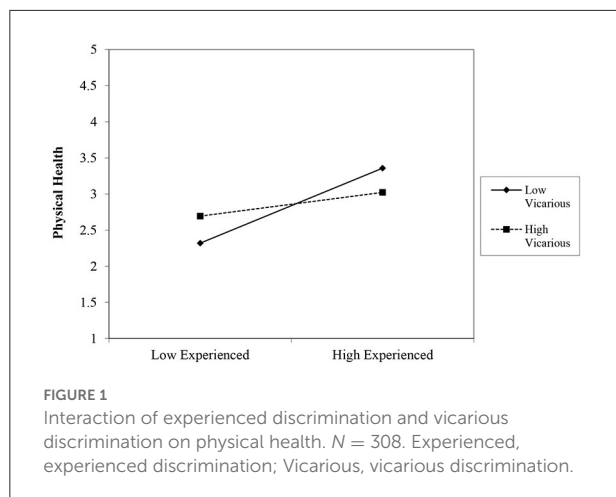
demonstrate that experiencing discrimination and vigilance were associated with heightened physical health symptoms.

The final two models predicted sleep quality and sleep disturbances. Beginning with sleep quality, results showed that the only significant predictor of sleep quality was vigilance ($b = -0.08$, 95% CI $[-0.14, -0.01]$, $p = 0.018$), with more vigilance relating to lower sleep quality. For sleep disturbances, there were significant relationships for experienced discrimination ($b = 1.54$, 95% CI $[0.88, 2.20]$, $p < 0.001$) and vigilance ($b = 0.59$, 95% CI $[0.02, 1.16]$), $p = 0.042$). This suggests that experiencing and anticipating more discrimination were associated with increased

sleep disturbances. In contrast, vicarious discrimination was unrelated to sleep disturbances.

Supplemental analyses

We additionally considered interactions between experiencing discrimination and either witnessing discrimination directed toward others or anticipating discrimination. Previous work has contended that the harms of experiencing discrimination may be compounded by other,



similar identity-related stressors such as seeing discrimination directed toward others who hold a shared social identity (38–40). To assess that possibility, we computed interaction terms for experienced discrimination and vigilance and for experienced discrimination and vicarious discrimination. The relevant interaction terms were entered in Step 3 of the previous regression models. Results indicated only one significant interaction between experiencing discrimination and vicarious exposure to discrimination for physical health symptoms ($b = -0.13$, 95% CI $[-0.22, -0.03]$, $p = 0.010$). We probed this interaction by plotting the relationship between experienced discrimination and physical health symptoms and one standard deviation above and below the mean for vicarious discrimination (see Figure 1). Results showed that the relationship between experienced discrimination and physical health is stronger when vicarious discrimination is low ($b = 0.44$, $p < 0.001$) as compared to when vicarious discrimination is high ($b = 0.14$, $p = 0.019$).

Discussion

The aim of the current study was to examine the impact of experienced and vicarious discrimination as well as vigilance on depressive symptoms, physical health symptoms, and sleep outcomes among A/AA during the COVID-19 pandemic. Results suggested that both experiencing and anticipating discrimination were associated with poor physical health, mental health, and sleep-related outcomes independent of demographic factors. This is in line with previous research utilizing the racism-stress framework, which identifies psychosocial stressors of racism, such as experienced discrimination and vigilance, as key mechanisms by which racial/ethnic health disparities are reproduced (19, 41, 42). However, the consequences of vigilance, or the anticipation of

negative treatment, have seldom been examined in the extant literature, particularly among A/AA.

Although we did not find a direct relationship between vicarious discrimination and health outcomes, we found a significant interaction between experiencing and witnessing discrimination for physical health symptoms. These results suggested that vicarious discrimination can have a buffering effect on physical health outcomes when one also experiences discrimination. Though seemingly counterintuitive, this finding is consistent with previous work suggesting that the health effects of experiencing discrimination may be lessened when individuals also witness discrimination against others [e.g., (43)]. Observing discrimination may signal that one is not being uniquely targeted by discrimination and may facilitate external attributions. Indeed, empirical evidence has demonstrated that people experience lower self-blame after experiencing mistreatment when they have also witnessed mistreatment toward others (43). Our finding that vicarious discrimination was unrelated to health outcomes, however, deviates from results from other recent studies (30, 44). Importantly, though, our study differed from the other studies in that it controlled for other types of discrimination experiences (e.g., personally experienced discrimination). It is therefore possible that the effects of vicarious discrimination were eliminated after controlling for other discrimination exposure.

Public health implications

Our findings underscore the importance of assessing multiple types of exposure to discrimination when examining the public health outcomes associated with the COVID-19 pandemic. Even after accounting for personally experienced and vicarious discrimination, our study highlights that vigilance can also erode the health and wellbeing of A/AA. Vigilance remains an understudied type of discrimination, particularly among A/AA. Our findings underscore the need for future empirical studies to incorporate vigilance into efforts to improve wellbeing among minoritized communities.

Although vicarious discrimination was not directly related to the health outcomes examined in this study, vigilance was strongly positively related to vicarious exposure to discrimination. This finding suggests that witnessing discrimination directed toward A/AA may signal that one needs to prepare themselves to also experience discrimination. Moreover, we found that vicarious discrimination interacted with experienced discrimination to determine physical health symptoms such that witnessing discrimination toward others buffered the impact of personally experiencing discrimination. We issue caution in interpreting this as a potentially positive consequence of witnessing discrimination; indeed, the correlational analyses confirm that vicarious discrimination is

harmful for a host of health outcomes. However, practitioners can use this finding to recognize the importance of facilitating external attributions when attempting to reduce the harm of discrimination. This aligns with previous findings that uphold the mitigating effects of external attributions following adverse treatment (45).

In sum, health experts should be aware of multiple and unique forms of discrimination and their potential to compromise the health and wellbeing of A/AA. Focusing only on experienced discrimination may fail to capture important social determinants of A/AA health.

Limitations and future research

Although this study incorporated a time lag between the predictor and outcome variables to reduce concerns about common method variance, we were unable to establish causality. However, the direction of the relationships examined in this study comport with prior longitudinal studies on discrimination and health [e.g., (46)], which support that experienced and anticipated discrimination are antecedent to poor health outcomes. Moreover, our measures of experienced, anticipated, and vicarious discrimination focused on general discriminatory behaviors directed toward A/AA that occurred during the COVID-19 pandemic rather than discriminatory behaviors that are specific to the COVID-19 pandemic (e.g., blaming A/AA for the spread or origin of COVID-19). We adopted this approach because COVID-19 is more likely to increase the frequency of discrimination directed toward A/AA rather than alter the specific expression of prejudice. However, it is possible that A/AA also experienced unique forms of discrimination during the COVID-19 pandemic that are also worthy of study.

Next, sleep quality was assessed using a single-item measure which may have contributed to the relatively weak observed relationships with the three forms of discrimination. Though measuring sleep quality in this way is common, it is possible that our measure deflated relationships. Subsequent research should continue to explore the relationship between discrimination and perceived sleep quality to clarify these findings. We also did not consider differences based on the specific ethnicity of our participants and it is possible that exposure to discrimination operated differently across subgroups of A/AA. For example, Chinese Americans may experience higher levels of discrimination and/or more severe consequences in the context of the COVID-19 pandemic. We recommend that future research consider this possibility as well as specific ways to reduce vigilance. Current work has conceptualized the conditions that might result in vigilance, but little attention has been devoted to identifying ways to lessen its impact on health.

Conclusion

The current study extends previous work on the rise in anti-Asian discrimination observed during the COVID-19 pandemic and its impact on health by considering two novel forms of discrimination: vicarious exposure to discrimination and vigilance or anticipated discrimination. Results demonstrated that experiencing discrimination and anticipating discrimination were each uniquely associated with negative mental and physical health symptoms as well as disrupted sleep. We found an interactive effect found between experienced discrimination and vicarious discrimination on physical health, indicating that both experiences combine to affect physical health symptoms. Public health officials and scholars can leverage these findings to better understand the full range of social determinants that may be harming the wellbeing of A/AA, including as part of the COVID-19 pandemic, and develop corresponding interventions to protect A/AA health.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Ohio University Institutional Review Board. The patients/participants provided their written informed consent to participate in this study.

Author contributions

LD contributed to study planning, data collection, analyses, writing, and editing. BF contributed to analyses, writing, and editing. CP contributed to study planning, writing, and editing. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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“No, but where are you *really* from?” Experiences of perceived discrimination and identity development among Asian Indian adolescents

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Asian Indians were the first South Asians to immigrate to the United States in the late 1800s and are currently the largest ethnic group of South Asians living in the United States. Despite this the literature on perceived ethnic and racial discrimination experiences among this group is relatively understudied. The documented experiences of Asian Indians who either recently immigrated from India or were born and raised in America pose an important question: what are the experiences of perceived discrimination among Asian Indians living in America, particularly among younger populations who are continuing to develop their racial and ethnic identities? The current study utilized phenomenological methodology to explore the experiences of nine Asian Indian American adolescents' (ages 12–17 years). Data were collected *via* semi-structured interviews to assess participants' experiences of ethnic and racial discrimination and identity development. Thematic analysis was used to identify themes and subthemes among the participants' responses. Asian Indian adolescents living in the United States report experiencing discrimination at a young age. It is also evident that Asian Indian youth experience significant challenges when developing their sense of ethnic and racial identity while living within the United States. Findings document the racial and ethnic discrimination that Asian Indian adolescents living in the United States may experience from a young age. Importantly, these discrimination experiences are occurring as Asian Indian adolescents are developing their racial and ethnic identities. This study provides insight for future research, which is necessary to fully understand the experiences of Asian Indian adolescents.

KEYWORDS

South Asian, Asian Indian, race, ethnicity, discrimination, identity development

Introduction

According to the U.S. Census, there are currently over 3.5 million South Asians living within the United States, occupying the fastest growing population among all major ethnic groups in the country (1). The growth of the South Asian population is partially due to the increasing number that are migrating to the U.S. for various educational and employment opportunities (2). Despite recent increases in immigration, South Asians have experienced significant institutional hurdles in their historical movement to the United States (3). The Barred Zone Act of 1917 and Asian Exclusion Act of 1924 significantly impacted immigration of South Asians to the United States, and although they were eventually allowed entry by quota in 1946, South Asians were still viewed as outsiders (3). The increased presence of South Asians ultimately led to tension amidst White communities in areas of high immigration, resulting in ethnic discrimination, which is the act of treating other individuals differently based on cultural values, beliefs, and practices as opposed to just their race alone (2, 4).

These tensions increased over the years, especially in the aftermath of the terrorist attacks on September 11th, 2001. Racial and religious markers (e.g., skin color and headscarves, respectively) were (mis)labeled as physical indicators of “terrorists”, resulting in racial discrimination directed at South Asians, which is differential treatment of individuals based on their qualities (such as skin color) associated with a particular racial group (2, 5). According to the FBI (6), trends in anti-Muslim hate crimes have risen by 67% from 2014 to 2015 and are currently at the highest level since 9/11 (7). It is estimated that these trends will continue to rise in the current political climate, where “xenophobic political rhetoric,” defined as “comments motivated by a fear or hatred of those perceived to be different, other, or ‘foreign,’” become the norm (7) (p. 5). Given the alarmingly high rates of hate crimes directed at individuals perceived as foreign, it is essential to understand how South Asians living in America, or South Asian Americans (SAA), are currently experiencing and coping with discrimination.

Despite these rates of discrimination, the literature on SAAs’ perceived experiences is relatively understudied (8). It is speculated that this may be due in part to the ‘model-minority myth,’ attributed to most Asian American groups (9). The model-minority myth is based on stereotypes of Asian Americans as successful, high achieving, and well-off in society (9–11). The proportion of Asian Americans with less than a high school education, who are living in poverty, working overtime, have multiple jobs, or who experience income inequality, are overlooked in these cases of success, however (11, 12). A significant number of Asian Americans have less than a ninth-grade education; even those who are at the same educational level as White Americans are paid comparably less (11). Additionally, relatively recent studies have provided

contrasting data that suggest Asian Americans do not differ significantly from other groups in terms of GPA, SAT scores, and selection of science and engineering majors (10). Yet, Asian Americans and members of other groups still internalize this stereotype considering the continued stereotypical portrayal of Asian Americans in mass media (10). This stereotype can lead to the misperception of Asian Americans as mostly immune to the racial discrimination other racial minority groups face, when in fact the data suggest that Asian American adults experience racial discrimination at rates comparable to Latinx and Native American individuals (13–15). Further, the few discrimination studies available focus on SAAs broadly, even though the South Asian label is pan-ethnic and includes various ethnicities, cultures, and religions. Asian Indians are currently the largest ethnic group of SAA living in the United States (1, 16). Thus, it is important to understand Asian Indians Americans’ (AIA) unique experiences with discrimination in the broader context of South Asian experiences.

Kaduvettoor-Davidson and Inman (8) (p. 157) define first-generation SAA (which include AIAs) as “those who immigrated to the United States as adults, whereas second-generation South Asians Americans (and Asian American Indians) are those who are either born in the United States or immigrated prior to age 18.” India was colonized and under British imperial rule for 400 years, and this resulted in the internalization of cultural norms and values of the British, including the primary use of the English language and the perception of lighter skin being associated with higher social class (17). Although immigrating to the U.S. meant validating many of these same practices, it is not clear whether this made it easier or more difficult for Asian Indians to assimilate into American culture. Even with assimilation, AIAs are still being discriminated against racially and ethnically and are seen as perpetual foreigners. The historical context of AIAs’ experiences with colonization suggests that first-generation immigrants are potentially experiencing both racial and ethnic discrimination.

While first-generation immigrants may experience discrimination due to observable cultural and ethnic factors such as clothing or accents, as well as race, it is possible that second-generation immigrants are mostly subjected to race-based discrimination (8). Second-generation immigrants within the United States are raised within a society that emphasizes race, a factor that has social, cultural, and political implications and expectations such as institutional racism, educational achievement, and employment disparities. This results in the racial socialization of second-generation immigrants based on their skin color, in addition to their ethnic identification (18). While most of the literature has discussed the discrimination experiences of first- and second-generation Asian Indians in a comparative sense, additional research is needed to fully understand how second-generation Asian Indians’ discrimination experiences may be unique in nature.

Most of the studies conducted on AIAs and their perceived experiences of discrimination have focused on young adult and adult populations, neglecting investigation into adolescents' discrimination experiences. Tummala-Narra and colleagues (19) examined South Asian adolescents' narratives to understand acculturative stress and coping and found that several participants reported experiences of discrimination toward their family and themselves across multiple situations and contexts. Participants also reported facing stereotypes focused on terrorism and being model minorities, as well as feeling a general lack of belonging and acceptance among peers and outside the home. Similarly, South Asian adolescents in another study reported peers, teachers, and adults held higher academic expectations of them compared to other adolescents their age, and they cited this as a form of ethnic discrimination (20). The adolescents in this study also reported significantly higher peer-related distress, compared to their African American, Hispanic, and non-Hispanic White peers. Other studies indicate South Asian individuals experiencing heightened anxiety related to the environment, awareness of their physical appearance, alienation, emotional stress, issues with self-esteem, and depression (8, 21, 22).

Given SAAs' significant history of colonization and immigration to the U.S., Ibrahim and colleagues (3) developed a model to understand first-generation SAA identity in the context of specific cultural factors. Ibrahim et al. (3) asserted that first-generation SAA develop their identities within a larger social-cultural context that considers ethnic group of origin, community, religion, neighborhood, social class, educational level, gender, and sexual orientation. This factor of ethnic group of origin is what mainly distinguishes the South Asian Identity Development Model from other ethnic minority models currently available. Importantly, Ibrahim et al.'s (3) framework acknowledges the historical significance of the colonization, immigration, and discrimination experiences of first-generation SAAs as context for how individuals develop their sense of identity. Considering interethnic differences among SAAs, it may be difficult to generalize identity development among AIAs. However, Iwamoto and colleagues (23) assessed the application of Ibrahim et al.'s (3) framework among second-generation AIAs and found support for the idea of identity development being a continuous process across the lifespan, subject to individual contextual factors (i.e., racism, etc.). Identity is an important factor to consider for discrimination experiences because there are a number of studies that show ethnic and racial identities may play a protective role when it comes to the negative effects of discrimination (24).

The purpose of the current study is to expand on the current literature on the perceived racial and ethnic discrimination that second-generation AIA youth experience. It is clear that the experiences of AIA adolescents are largely

understudied, since most of the studies included have focused on adult populations. Age appears to change outcomes of discrimination and the degree to which ethnic identity can serve as a protective factor. With the additional consideration that adolescence is a crucial time for identity development, there is a clear need to examine this population to understand how youth experience racial and ethnic discrimination. Clarification of the conceptualization and role of racial and ethnic identity for AIAs is warranted, given the mixed results among the discrimination literature. The definition of ethnic discrimination is often used interchangeably with racial discrimination, which prevents researchers from fully understanding AIAs' experiences. While many studies examine first-generation AIAs, the contextual factors that differentiate experiences of first- vs. second-generation AIAs also necessitates an exploration of the role of ethnic and racial identity among second-generation individuals.

Materials and methods

Research design

The lead researcher identifies as a second-generation AIA woman, and the research team is composed of scholars of color of African and East Asian descent. The lead researcher acknowledges her own negative experiences of discrimination based on her race and ethnicity. The lead researcher is interested in how these experiences are unique to younger individuals as they are beginning to form their identities in adolescence. The lead researcher wants to explore the lived experiences of second-generation AIA adolescents and how discrimination may impact these individuals' sense of mental well-being. Given the aforementioned gaps in the literature and the authors' positionalities, the current study will utilize a phenomenological methodology, with an interpretivist approach. Phenomenological methodology allows the researcher to understand a given phenomenon, in this case, discrimination, as lived experiences that are unique to each individual (24). An interpretivist approach is one where "the researcher is trying to make sense of the participants trying to make sense of their world" through their own interpretations (25).

The current study has three main questions. (1) "What are second-generation Asian Indian American youth's experiences with racial and ethnic discrimination;" (2) "How are these unique discrimination experiences impacting these individuals;" and (3) "What are second-generation Asian Indian American youth's experiences with forming their racial and ethnic identities?" These questions are exploratory in nature and will provide information on the nature of discrimination and how identity formation is experienced by second-generation Asian Indian American adolescents.

Sample and recruitment

The present sample consisted of nine adolescents ages 12–17 years recruited from the Southwestern region of the United States. These participants were selected based on their identification as second-generation AIAs. For the purpose of this study, second-generation AIAs are defined as individuals who were born in the United States, to parents who immigrated from India after the age of 18. Snowball recruiting methods, internet posts, and recruitment flyers shared through local leaders at churches, temples, mosques, and cultural centers in major metropolitan cities in the Southwest region of the U.S. Parental consent and child assent were obtained prior to the interviews, consistent with institutional Internal Review Board (IRB) approval.

Measures

Data were collected *via* an individual 30 min to 1 h semi-structured interview with participants. The interview included questions about participants' self-defined sense of ethnic and racial identity, their cultural background and history of acculturation in the context of their families, the extent of their interactions with AIA and non-AIA peers, and their experiences with various forms of discrimination. Five hypothetical scenarios related to discrimination to understand how each participant uniquely defines and frames discrimination from their own perspectives was provided along with follow-up questions and prompts as necessary. Interviews were conducted in person, or *via* Doxy.me, a HIPAA-compliant videoconferencing service. Interviews were audio recorded and transcribed through a third-party service (Rev.com) to support later coding and analysis.

Study procedures

Interested parents set up an initial meeting in person or virtually *via* Doxy.me to review study materials, to have questions or concerns addressed, and to complete consent forms. Once parent and participant consent and assent were obtained, interviews with the adolescents were scheduled through parents. Each participant was compensated with a \$20 Amazon giftcard after completion of the interviews.

Analysis

The current study employed thematic analysis using NVivo software (26). Thematic analysis allowed for the participants to provide full accounts of their experiences with discrimination, to identify themes that emerged across participants' data.

TABLE 1 Demographic characteristics of interview participants.

Participant Initials	Age	Grade	Gender	Generation Status
A.T.	16	11th	M	2 nd
L.G.	15	10th	F	2 nd
S.C.	13	8th	M	2 nd
N.D.	14	8th	F	1.5 ^a
M.K.	12	7th	F	2 nd
R.V.	15	10th	M	2 nd
H.G.	14	9th	F	2 nd
N.V.	15	9th	F	2 nd
S.M.	17	12th	F	2 nd

^a1.5 generation Asian Indian adolescents are those who were born in India but came to the U.S. before age 16 (9). This participant moved to the U.S. at age 4.

Rev.com (third-party transcription service) transcribed each participant's interview, and transcripts were sent to participants for member checking, allowing adolescents to review contents for validity (27). Content of the interviews were then reduced to examine surface themes and paraphrases, and themes were further explored for subthemes, allowing us to map out how themes and subthemes were interrelated. We then identified how themes were common across participants' interviews to explain how second-generation AIAs adolescents are experiencing discrimination.

Results

For the current study, nine Asian Indian American adolescents were interviewed; demographics of the participants are listed in Table 1. NVivo software was used for coding (26).

There were three major themes that emerged across the nine interviews out of the prompted scenarios: discrimination, aspects of racial and ethnic identity, and the balancing act of identity management. There were also several subthemes identified; with "Otherness," "Racial discrimination," and "Assimilation" appearing as the top three subthemes. These themes and subthemes arose both in response to the scenario prompts and to the questions asked about participant experiences.

Discrimination

Within the discrimination theme, several subthemes appeared during coding. In particular, "racial discrimination," "ethnic discrimination," "in-group discrimination," "microaggressions," "terrorist," "Trump," and "fear of discrimination" were all subthemes identified across most of the interviews. Some of the participants recalled specific scenarios that stirred up feelings of fears of discrimination such

as recent hate crimes against Indians and increased activity of white supremacist groups. One participant commented on how he self-identifies, "...like in Kansas, an Indian man was shot... in a bar. After that I got really scared because like, I'm brown, I'm Indian, living in America and I didn't want anything to happen tragic to me or my family. So before saying I was Indian, I would always say I'm American and also after the... election... I would always just identify as American after that." Similarly, another participant commented on hurtful comments she would hear, "After... was elected in 6th grade, everyone was really glad 'cause they thought that he would build a wall to kick out all the Mexican people and the Indian people... they were the people that bullied my *hijabi* friend. They talk a lot about Indians and how they're part of ISIS or something."

With ethnic discrimination, participants cited experiences of peers misunderstanding and making assumptions based on language, religion, and culture. "...this one kid... found a rock and said 'look it's your God'" and "...in math class... we had like little dots and we would have to... put them into groups... And a white kid was saying 'is this your God?' and put it on his forehead." Other hurtful comments often came up among peer interactions—"...and then sometimes they would say stuff about the food or they would mock an Indian accent... like, 'I don't like Indian food'... some people have said things like 'it's gross' or 'it's weird' or 'it smells really bad.'" Some of these interactions can be identified more accurately as microaggressions, as well. As one participant experienced related to academics, "...you don't do as well as you think you would on a test or something and someone else would be like... 'How? You're Indian, you're supposed to be doing good... you're supposed to have an A.'... and that kind of hurts." Comments like these are consistent with endorsement of the model minority myth.

The issue of skin color was another form of discrimination expressed by some participants, mostly among AIA peers. "[Indians] think that light-skinned Indians are more superior to dark-skinned Indians. They always want me to keep my light skin or whatever." Another participant said "...I love my skin color... Indian society... tells you that only fair, skinny girls are pretty... being darker-skinned colored, I have been called the color of dirt before, and by a fellow Indian... and it really did hurt me." Interestingly, the references made to skin color were only brought up among the female participants and were often referencing themes of beauty and desirability. Although participants did not consistently identify experiences as discriminatory or racist, they were often described as feeling hurtful.

Racial and ethnic identity

Most of the participants used race and ethnicity as interchangeable concepts. Many participants mentioned that they were first aware of their racial and/or ethnic identity

early on in their school years. Often these experiences involved comparisons of skin color, or interactions where peers questioned aspects of the participants' culture. Participants reported feeling embarrassed about participating in Indian classical dance, having religious calendars inside their home, or deciding to spend more time speaking English instead of their mother tongue. Parents' strict parenting styles (e.g., participants were not allowed to attend sleepovers or go to pool parties) were also experiences that made participants aware of their differences among their friends. Some participants reported feeling angry that they did not have white skin like their friends, and their desire to be more "American" instead as early as preschool.

Several participants spoke about having AIA friends and how comfort changed across the years for some individuals. Most agreed that having Indian friends was more comforting because it was easier to relate and be accepting of others' values and beliefs. In fact, a participant said her mother insisted that she continues to keep Indian friends "so that they understand... our values." Some of this understanding lends itself to teasing and racial jokes that are still seen as acceptable considering they are coming from AIA peers. As one participant noted, "I like to be with Indian people because not in an insulting type of way but in a humorous way, I like to make Indian jokes with my friends. That's why I like having Indian friends. With American friends I could make some American jokes, but like I said, I like to be connected to India." On the other hand, having Indian peers was stressful for some participants due to the sense of competition that inevitably arose. "Indians have this weird thing... where they're like two-sided. In front of me they're like... you're my best friend. Behind you, they just really want to compare themselves to you and get your opportunities and your first place" one participant stated. This example illustrates the pressures incurred by the internalization of the model minority myth, where Asian Americans must do well academically.

Identity management

Identity seemed to be an area of particular struggle for these youth, as they straddled their "American" identity with their "Indian" identity. One participant captured this struggle effectively; "Well, if I go out in public in the world, then everyone will look at me as Indian. They will never look at me as Indian American. That's just how I look. So I think with physical appearance, I'm more Indian... Me personally, I'm Indian American because I know that. I know my experiences; they aren't Indian, they're Indian American." This was also an issue in that some participants felt like they were deemed "too Indian" or "too American" in different contexts. For example, participants described Indians who "act American, or white" as being "white-washed" because they are "turning white" as being perceived as cool. "I've heard a few times, 'oh you're Indian, but you're the cool kind... you're good Indian'." For

these participants, there is an implicit assumption that being Indian was not seen as desirable or socially acceptable.

Code-switching is a form of identity management observed among participants who reported actively “switching” identities based on the context and make-up of the peers with whom they interacted. For example, one participant stated “... the word Indian American, it means you live between two worlds, my experience. I come home, I’m Indian. I live Indian lives, I eat Indian food...I step over my threshold, I become American. Go to school, I’m an American...Your parents don’t kind of understand the western world...and the western world doesn’t really understand the Indian world...you live between two worlds and you’ve got to be knowledgeable to know how to balance them.” Similarly, another participant states that “on papers and everything, I write Asian American, but I don’t know. With white people, I guess I’m American and then with Indian people I’m Indian.” One participant mentioned going to restaurants and making their “accent more American so that [non-Indians]...won’t...think I can’t speak English” when they order food. These participants shared experiences in juggling the two sets of values associated with each identity they managed.

Overall, participants seemed to have endorsed experiences of perceived discrimination of various levels and kinds even at young ages. Additionally, participants were able to verbalize their experiences related to developing their racial and ethnic identity. In particular, as second-generation AIA youth, it seems the discriminatory experiences and conflicting value systems made it challenging for these youth to maintain consistency in their identity development over time.

Discussion

While the research is minimal, most of the available literature on the area of discrimination experiences among AIAs focuses on college-age and adult individuals. These studies have documented the negative impacts of discrimination on mental health outcomes, yet documentation of how this impacts adolescents is generally lacking (22, 28). Considering the historical context of AIAs immigrating over the last several decades, youth are likely to be experiencing stressors such as acculturation and navigating differing value systems. The purpose of the current study was to explore the unique discrimination experiences of AIA youth more broadly. Qualitative research designs have the benefit of providing a well-rounded understanding of a given area, which is what the current study aimed to capture for AIA youth’s discrimination experiences.

This study was exploratory, allowing the participants to act as experts on their individual experiences of discrimination and identity formation. Participants provided information that was supportive of much of the research on discrimination experiences that South Asians (and in particular, AIAs) endure.

The prompted scenarios in this study allowed for a “baseline” in understanding what each participant defined as discrimination in the first place. Interestingly, most participants seemed to have easily established an agreement in what was considered discriminatory. The younger participants struggled a little more with identifying microaggressive scenarios as discrimination, although they still acknowledged a level of discomfort with the situation.

The cross-case analysis pulled themes that further characterized the experiences these youth have with discrimination. In particular, participants were quick to share their affective responses to discrimination experiences. For example, these youth reported experiencing heightened sense of fear and anxiety about events they heard on the news and how they may feel at school with peers who actively created racially hostile environments.

It seems that AIA youth are constantly straddling the identity “line,” trying to balance their “Asian Indian” identity with their “American” identity. In the current study, participants discussed the various ways they found themselves “code-switching” to feel more comfortable with these opposing value systems. For these youth, this often meant having separate interests and behaviors at home with one’s family vs. at school with friends. This implies that despite the “benefits” implied in assimilating into American culture, AIA adolescents may still be in a “lose-lose” situation where they are “too Indian” yet also “too American.” Additionally, most of the experiences these youth recounted were racially charged. This supports previous research that suggests second-generation youth endure more discrimination based on skin color and race, as opposed to the increased ethnic discrimination that their first-generation counterparts may experience (16).

Importantly, this study highlights a significant finding—that AIA youth are experiencing discrimination at a very early age. Although the participants in this study were adolescents, most participants shared that they were first aware of their race or ethnicity as early as preschool or elementary school, often due to a negative event that brought their race or ethnicity to the foreground. Second-generation AIA youth may be experiencing additional challenges considering the constant “tug-of-war” they experience with their Asian Indian and American identities. Further, the wide range of cultural, linguistic, historic, and religious diversity among AIAs as a whole group adds to the complexities of this identity development, and also leaves room for within-group discriminatory experiences.

Limitations

While the current study has opened up avenues for better understanding the experiences of AIA youth, there

are some limitations to consider when generalizing the findings. Participants were recruited through convenience sampling, and as such many of the participants were from a small sample in the Southwest region of the U.S. It is possible that the experiences outlined in their interviews are culturally bound to the Southwest; youth living in California among dense populations of SAAs may have completely different experiences with discrimination. Recruiting participants for interviews across a broader range of geographical areas in the United States may provide a more well-rounded picture of discrimination experiences.

Conclusions

This study has provided an initial understanding of the experiences that may be shaping AIA youth's mental health and interactions with other AIAs or non-AIAs. Children and adolescents as young as 12 (and likely younger) are experiencing discrimination based on race and ethnicity. Further research is needed to determine how ethnic and racial identity may influence in how AIA youth relate to and navigate their worlds in the midst of ethnic and racial discrimination.

Data availability statement

The datasets presented in this article are not readily available because data not to be made publicly available. Requests to access the datasets should be directed to drashaunni@gmail.com.

Ethics statement

The studies involving human participants were reviewed and approved by Texas A&M University IRB. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin. Written informed consent was obtained from the minor(s)' legal guardian/next of kin for the publication of any potentially identifiable images or data included in this article.

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Author contributions

AU and JB contributed to study design. AU, JB, PS, and JL contributed to literature review and background. AU conducted data collection. AU and WL contributed to data analysis. All authors contributed to the article, expertise on the subject matter, and approving the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.955011/full#supplementary-material>

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Association of everyday discrimination with health outcomes among Asian and non-Asian US older adults before and during the COVID-19 pandemic

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Increases in anti-Asian COVID-19 related discriminatory behaviors have been observed, many of which targeted older adults. Studies demonstrate that racial discrimination is associated with worse health outcomes, including anxiety, depression, and sleep difficulties. No previous studies have examined the impact of day-to-day experiences of discrimination before and during COVID-19 on both Asian and non-Asian older adults within the same sample. We examined whether everyday discrimination was associated with increased anxiety and depression symptoms, decreased levels of functioning, and increased sleep difficulties among Asian and non-Asian US older adults before and during the pandemic. Data came from the Positive Minds-Strong Bodies randomized clinical trial, an evidence-based mental health and disability prevention intervention for racially and ethnically diverse older adults with elevated depression or anxiety symptoms and minor to moderate disability. We conducted secondary data analyses in a cohort of 165 older adults (56 Asian and 109 non-Asian) assessed before COVID-19 (May 2015-May 2018) and during COVID-19 (March 2021-July 2022). Regression models examined whether everyday discrimination impacted health outcomes differently before and during COVID-19, and whether this effect was stronger among Asian compared to non-Asian older adults. Non-Asian older adults reported the same levels of everyday discrimination before and during COVID-19. Consistent with literature suggesting that social distancing has inadvertently kept US Asian populations from experiencing discrimination, Asian older adults reported marginally lower levels of everyday discrimination during the pandemic compared with pre-pandemic. We found that everyday discrimination was not associated with health outcomes before COVID-19. In contrast, during the pandemic, everyday discrimination was associated with worse anxiety and depression symptoms and worse levels of functioning, although only the impact on depression was significantly stronger compared with before the pandemic. This negative impact of everyday discrimination on health outcomes during the pandemic appeared to affect both Asian and non-Asian older adults similarly. Social support and social cohesion buffered against

the negative effect of everyday discrimination on depression and level of functioning during the pandemic. Results suggest that public health interventions aimed at reducing everyday discrimination and emphasizing social support and cohesion can potentially improve health outcomes for all US older adult populations.

Clinical trial registration: www.ClinicalTrials.gov; identifier: NCT02317432.

KEYWORDS

everyday discrimination, depression and anxiety symptoms, level of functioning, sleep quality, Asian and non-Asian older adults, COVID-19

Introduction

Due to misinformation about the novel coronavirus (e.g., referring to it as the “China virus” or “Kung Flu”), anti-Asian racism and xenophobic attacks against Asian Americans have significantly increased since the beginning of the COVID-19 pandemic (1–5). From March 19, 2020 to March 31, 2022, the data tracking system developed by the Stop Asian American and Pacific Islander (AAPI) Hate coalition reported a total of 11,467 hate incidents against AAPI persons (6). Since racial discrimination is a well-established risk factor of poor health outcomes (7), including depression and anxiety (8), posttraumatic stress (9), and sleep disruptions (10), several recent studies have examined the effect of anti-Asian COVID-19 related discrimination on Asian Americans’ health. These studies have confirmed that racial discrimination during the COVID-19 pandemic is associated with worse depression, anxiety, and posttraumatic stress disorder symptoms, physical symptoms, and sleep quality (1–4).

This prior evidence on the association between anti-Asian COVID-19 related discrimination and health outcomes has been limited by two factors. The first one relates to the use of samples that include Asian populations only. The one exception is a prior study showing that both Asian and non-Asian US young adults had negative affective reactions to anti-Asian COVID-19 related discrimination (3). Yet, other minority populations have reported increased discrimination because of their race or ethnicity amid the COVID-19 pandemic. A recent study by the Pew Research Center showed that, compared to White Americans, Asian and Black Americans reported that it was more common for people to express racist views toward them since the coronavirus outbreak and that they feared someone might threaten or physically attack them because of their race (11). Asian, Black, and Latinx Americans were also more likely to report that people have acted as if they were uncomfortable around them and that they had been the subject of slurs or jokes (11). In addition, the relationship between discrimination and health outcomes has been found to differ by racial and ethnic groups. A recent meta-analysis, for example, showed that the association between racial discrimination and negative mental health is stronger for Asian and Latinx Americans compared

with African Americans (7). However, there is limited research examining whether everyday experiences of discrimination during COVID-19 had a stronger impact on Asian than non-Asian US adults.

The second limitation relates to a lack of pre-pandemic baseline data against which to measure changes in discrimination within individuals. Although recent studies have confirmed that racial discrimination during COVID-19 is associated with poorer mental and physical health, in the absence of pre-pandemic data these studies implicitly assume that lower levels of discrimination would have been reported had the pandemic not happened. However, the pandemic has imposed some restrictions that could have led to decreased opportunities to experience discrimination. After the World Health Organization declared the COVID-19 outbreak a global pandemic on March of 2020, many US states enacted stay-at-home orders to prevent the spread of COVID-19. Whereas, social isolation itself can negatively affect mental and physical health (12), a recent study suggested that isolation due to stay-at-home orders could have served as a protective factor against experiencing discrimination for some Asian adults living in the US (4). In the same study, Asian and Asian Americans who reported not experiencing discrimination during COVID-19 attributed it to the fact that they lived in predominantly Asian communities (4). Thus, studies that include pre-pandemic data on racial discrimination are needed to reach conclusive evidence regarding its impact during COVID-19.

In addition, there is limited research on the association between racial discrimination and health outcomes during the pandemic among racial and ethnic minority older adults. Studying the effect of discrimination amid COVID-19 among these minoritized groups is relevant for at least four reasons. First, a recent report by the Stop AAPI Hate coalition showed that between March 2020 and December 2021, 7.6% of hate incidents reported by AAPI persons targeted older adults aged 60 years and above (13). These data also revealed that Asian American older adults who experienced hate incidents reported increased fear, stress, and anxiety during the pandemic than Asian American older adults overall (13). Second, although racial discrimination can impact mental and physical health

outcomes across a range of populations, recent work has increasingly emphasized the potential compounding effect that ageism and racism can have on older adults (14–16). According to a 2021 editorial in the *Lancet Health Longevity* (14), ageism, independent of race, has become entrenched in health-care systems. Indeed, studies have shown that older adults receive inadequate care due to stereotypes, prejudice, and discrimination (16). Thus, by definition, the cumulative stress of racial discrimination can result in the most severe deterioration of mental and physical health in older adults. Third, because of high rates of morbidity and mortality, the pandemic has placed a disproportionate load on racial and ethnic minority older adults. From the beginning of the pandemic, being of older age became the strongest single determinant of all-cause mortality from COVID-19 (17). Research on the initial health effects of COVID-19 also demonstrates that US Asian, Black, and Latinx older adults are all at increased risk of death from COVID-19 compared to their White counterparts (18, 19). Lastly, also due to high rates of morbidity and mortality, older adults have been the most affected by increased social isolation because of stay-at-home restrictions (20). Increased social isolation has been found to be associated with decreased life satisfaction, higher levels of depression, and lower levels of psychological wellbeing (21–24), including during the COVID-19 pandemic (25). Further, widespread stay-at-home and social distancing measures during the pandemic may have made maintaining social support more challenging. Perceived discrimination can lead to increased psychological distress especially when individuals have limited access to resources for coping (26, 27), and social support has been highlighted as a common coping resource that can alleviate the effects of discrimination (28). Prior research has found consistent evidence that social support, including support from family and friends as well as neighborhood cohesion, is a protective factor that buffers against the negative effects of discrimination on health (29–31).

Using a cohort of 165 older adults who were assessed before and during COVID-19 in the context of a randomized clinical trial (RCT), the present study had three aims. Our first aim was to investigate changes in self-reported everyday discrimination and mental and physical health (depression and anxiety symptoms, level of functioning, and sleep difficulties) within Asian and non-Asian older adults before and during COVID-19. Our second aim sought to quantify the association between self-reported everyday discrimination and mental and physical health before and during COVID-19, and to test whether these associations were stronger among Asian older adults compared with non-Asian older adults. In alignment with prior research, our last goal was to examine whether social support and social cohesion were possible moderators altering the association between discrimination and health outcomes of older adults.

Methods

Study design and setting

This is a secondary analysis using data from the Positive Minds-Strong Bodies (PMSB) randomized clinical trial, a disability preventive intervention aimed to improve mental health and physical functioning of racial and ethnic minority older adults with mild to severe depression or anxiety symptoms and minor to moderate disability (32). Research assistants blinded to intervention condition conducted screening, baseline, and follow-up assessments between May 2015 and March 2019. Participants were recruited from community-based organizations (CBOs) and community clinics serving low-income older adults in Massachusetts, New York, Florida, and Puerto Rico. After assessing their capacity to consent, potential study participants completed a screening assessment to determine eligibility. Eligible participants who agreed to participate completed a baseline assessment and then were randomized to either PMSB or enhanced usual care (EUC). Follow-up assessments were conducted at 2-, 6-, and 12-months post-baseline.

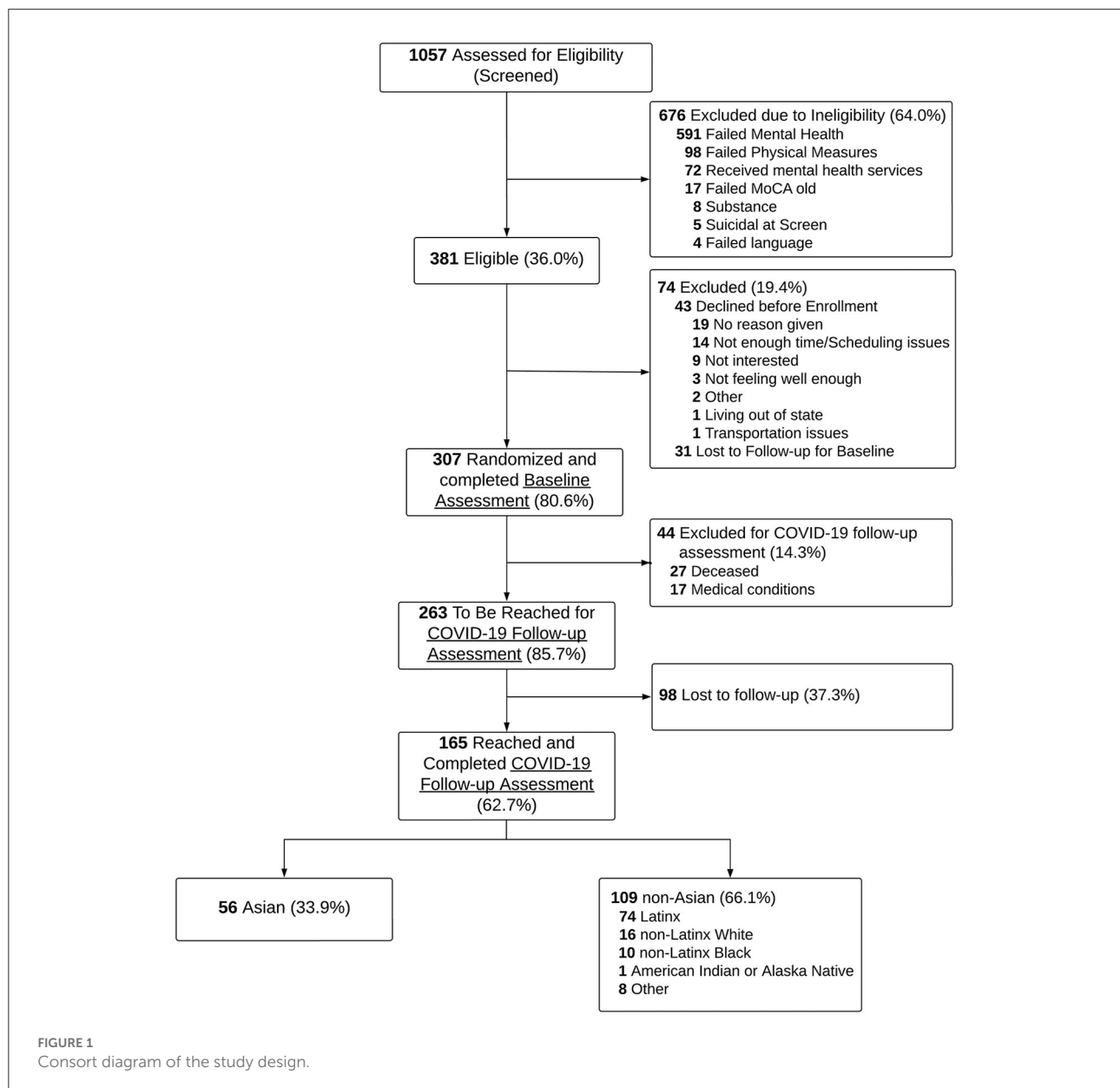
As part of a follow-up study aimed to assess the impact of the COVID-19 pandemic among older adults previously enrolled in PMSB, research assistants re-contacted study participants between March 2021 and July 2022 and invited them to participate in a COVID-19 follow-up assessment. Self-reported measures of mental and physical health were included in all assessments (i.e., baseline, 2-, 6-, and 12-month follow-up, and COVID-19 follow-up). However, self-reported everyday discrimination was included in the baseline and COVID-19 follow-up assessments only. Thus, the present study used the baseline assessment, conducted between May 2015 and May 2018, as the only pre-pandemic data. The COVID-19 follow-up assessment, collected between March 2, 2021, and July 18, 2022, was used as the during-pandemic data. Study participants completed the COVID-19 follow-up assessment ~2.9–6.4 years post-baseline. In the initial RCT, study procedures were approved by the Institutional Review Boards of Massachusetts General Hospital/Partners HealthCare and New York University, with ceded reviews for partnering CBOs conducting human subjects' research. The Institutional Review Boards for Massachusetts General Hospital and New York University approved the ongoing COVID-19 follow-up assessment. All participants provided informed consent.

Participants

In the initial RCT, 1,057 potential participants were screened at the participating CBOs and community clinics to assess eligibility. Eligible participants were 60 years old and above, spoke either English, Spanish, Mandarin, or Cantonese, and

presented mild to severe depression or anxiety symptoms and minor to moderate disability. Mild to severe depression symptoms were defined as scoring five and above on either the Patient Health Questionnaire-9 (PHQ-9) (33) or the Geriatric Depression Scale-15 (GDS-15) (34). Mild to severe anxiety symptoms were defined as scoring five and above on the Generalized Anxiety Disorder-7 (GAD-7) (35). Minor to moderate disability was defined as scoring between three and 11 on the Short Physical Performance Battery (SPPB) (36). Exclusion criteria included disclosure of substance use disorders, having received mental health treatment in the previous 3 months or having an appointment within the following

month, lacking capacity to consent, being homebound, having a neuromusculoskeletal impairment, or not receiving medical clearance for exercise from a physician. Participants disclosing serious suicide plans or suicide attempts on the Paykel Suicide Risk Questionnaire (37) were referred to emergency health services and re-screened after 30 days. These exclusion criteria were applied because of the following reasons. The PMSB is a combined psychosocial and exercise training intervention. The psychosocial intervention was offered by community health workers (CHWs) who were trained approximately 80 h in providing resources for better coping with depression, anxiety, and stress. Thus, people disclosing substance use disorders were



excluded because that would require expertise outside the one CHWs were trained for. We excluded people receiving mental health services because the emphasis was on servicing those with no available treatments, given the shortage of mental health resources. However, people who were seeing psychiatrists for psychotropic medication were included in the study. People lacking capacity to consent were not included because of ethical reasons. Finally, people that were homebound, had a neuromusculoskeletal impairment, or whose physicians did not give them medical clearance for exercise were not eligible because the RCT also tested the combined effect of an exercise training intervention.

In total, 381 (36.0%) screened participants were eligible, of which 307 (80.6%) agreed to participate and were randomized to either PMSB or EUC conditions. In the COVID-19 follow-up study, we attempted to re-contact 302 of the 307 previously enrolled participants, as five of them were identified as deceased according to study records. An additional 20 participants have been identified as deceased from the National Death Index, and two more during COVID-19 follow-up data collection. Further, 17 participants were re-contacted but unable to participate due to medical conditions (e.g., cognitively impaired or severely ill). Among the remaining 263 participants, 165 (62.7%) were successfully reached and completed the COVID-19 follow-up assessment *via* phone interviews (56 Asian, 74 Latinx, 16 non-Latinx White, 10 non-Latinx Black, 1 American Indian or Alaska Native, and 8 of other-race). Because of small sample size in some racial and ethnic groups, all 109 non-Asian older adults were analyzed together (see Consort Diagram in [Figure 1](#)).

Interventions

The PMSB is a combined psychosocial and exercise training intervention. The psychosocial intervention, which was delivered within 6 months, included ten one-h individual sessions focused on psychoeducation, mindfulness, cognitive restructuring, noticing and overcoming unhelpful thoughts, and creating a self-care plan. The exercise training intervention, delivered within 12–14 weeks and concurrently with the psychosocial intervention, included 36 group sessions of physical exercise focused on enhancing functioning and preventing physical disability. As described in [Alegria et al. \(32\)](#), the intervention was found to improve self-reported depression and anxiety symptoms, and self-reported and objectively measured physical functioning at 6-month follow-up (32). In addition, improvements in self-reported outcomes were maintained 6 months post-intervention at 12-month follow-up (32).

Measures

Outcomes: Depression and anxiety symptoms, level of functioning, and sleep difficulties at baseline (pre-pandemic) and COVID-19 follow-up

Depression symptoms were assessed using the GDS-15, a 15-item self-reported measure used to screen, diagnose, and evaluate depression in older adults (34). The measure can be easily used by physically ill and mildly to moderately cognitively impaired older adults who have short attention spans and/or feel easily fatigued. The scale has a 92% sensitivity and a 89% specificity when evaluated against diagnostic criteria for depression (38). Respondents are asked to endorse yes or no questions about how they felt the last week. Of the 15 items, 10 indicate the presence of depression when answered positively, and five indicate the presence of depression when answered negatively. Total scores are calculated by summing all items (range: 0–15), and higher scores represent worse symptoms. Internal consistency (Cronbach's α) was adequate both at baseline and COVID-19 follow-up within Asian and non-Asian older adults (Asian α : 0.74 and 0.83 pre- and during-pandemic; non-Asian α : 0.72 and 0.77 pre- and during-pandemic). Anxiety symptoms were assessed using the (GAD-7), a 7-item self-reported measure to identify probable cases of Generalized Anxiety Disorder (GAD), which is characterized by excessive worry and persistent anxiety. The instrument has been widely used to screen for GAD and to monitor changes in anxiety symptoms over time. Respondents are asked how often have they been bothered by each of the core GAD symptoms in the past 2 weeks (e.g., feeling nervous, anxious, or on edge; worrying too much; becoming easily annoyed) (35). Responses are rated on a 4-point scale (0 = *not at all* and 3 = *nearly every day*). Total scores are calculated summing all items (range: 0 to 21; Asian α : 0.86 and 0.92 pre- and during-pandemic; non-Asian α : 0.79 and 0.88 pre- and during-pandemic), with higher scores representing worse symptoms.

Level of functioning was assessed using the Function Component of the Late-life Functioning and Disability Instrument (Late-life FDI), a 32-item self-reported measure for older adults that assess difficulties performing daily physical activities without help from others or assisted devices (39). The instrument has been widely used among community-dwelling older adults, with tested reliability and validity (40). Responses are rated on a 5-point scale (1 = *cannot do* and 5 = *none*). Total scores are calculated summing all items (range: 32 to 160; Asian α : 0.95 and 0.95 pre- and during-pandemic; non-Asian α : 0.96 and 0.97 pre- and during-pandemic), and higher scores represent greater levels of physical functioning. Sleep difficulties were assessed using five items about the following past-month self-reported difficulties with sleep: Falling asleep, staying asleep, waking up too early, frequent awakening during the night, and

sleeping during the day. Responses are rated on a 4-point scale (0 = *never* and 3 = *three or more times a week*). Total scores were calculated summing all items (range: 0–15; Asian α : 0.69 and 0.67 pre- and during-pandemic; non-Asian α : 0.66 and 0.81 pre- and during-pandemic), and higher scores represent lower sleep quality.

Exposure: Self-reported everyday discrimination at baseline (pre-pandemic) and COVID-19 follow-up

The 9-item Everyday Discrimination Scale (EDS) was used to assess the frequency of day-to-day experiences with unfair treatment that are chronic or episodic but generally minor (e.g., “you are treated with less courtesy than other people,” “people act as if they are afraid of you,” or “you are called names or insulted”) (41). Because the items within the EDS are framed rather generically, the scale has been used to measure everyday experiences of discrimination for a variety of racial and ethnic groups (including persons who self-identified as non-Latinx White) and has been found to have adequate psychometric properties. Prior studies examining racial and ethnic differences in responses to the EDS have also found that the measure can potentially be used across racial and ethnic groups as originally intended (42–45). Responses are rated on a 6-point scale (0 = *never* and 5 = *almost every day*). Total scores were calculated summing all items (range: 0–45; Asian α : 0.91 and 0.82 pre- and during-pandemic; non-Asian α : 0.89 and 0.83 pre- and during-pandemic), and higher scores represent higher levels of perceived discrimination. Because on average non-Latinx White populations tend to report lower levels of discrimination compared to other racial and ethnic groups, we conducted sensitivity analyses that excluded non-Latinx White older adults from our sample. Since our main findings were not affected by removing non-Latinx White participants, we chose not to exclude them from our analyses.

Moderators: Social support and social cohesion at baseline (pre-pandemic) and COVID-19 follow-up

Social support was assessed using 10 items about the quantity and quality of social support (46). Four items assessed emotional social support by asking about the frequency of discussing problems with family, friends, and spouse/partner (0 = *never* and 3 = *always*). Three items assessed instrumental social support by asking whether the respondent could depend on either relatives, neighbors/friends, or spouse/partner for help with practical things (0 = *no* and 3 = *yes*). One item assessed satisfaction with social support (0 = *very unsatisfied* and 3 = *very satisfied*) and the remaining two items asked about frequency of getting together with family and friends and frequency of being taken care of by family members (0 = *never* and 3 = *at least*

once a week). Total scores are computed by averaging all items (range: 0 to 3; Asian α : 0.67 and 0.73 pre- and during-pandemic; non-Asian α : 0.58 and 0.52 pre- and during-pandemic), and higher scores indicate greater quantity and quality of social support. Social cohesion was assessed using the social cohesion and trust section of the Collective Efficacy Scale (47), a self-reported measure of how well-communities work together to make things happen. Respondents were asked how true each of the following statements were about their neighborhood: “People in this neighborhood can be trusted,” “People in this neighborhood generally get along with each other,” “I have neighbors who would help me if I had an emergency,” and “People in my neighborhood look out for each other.” Items are rated on a 4-point scale (0 = *not at all true* and 3 = *very true*). Total scores were computed as the sum of all items (range: 0–12; Asian α : 0.74 and 0.70 pre- and during-pandemic; non-Asian α : 0.75 and 0.81 pre- and during-pandemic), and higher scores represent greater neighborhood social cohesion.

Additional baseline (pre-pandemic) sociodemographic characteristics

We used baseline data to adjust for age, sex (male or female), education level (less than high school or high school and above), and intervention condition (PMSB or EUC). We also used baseline data to characterize participants in terms of household size, birthplace (foreign born or US born), and primary language (English, Spanish, Mandarin, or Cantonese). We noted that all Asian older adults in our sample were foreign born and reported their primary language as either Mandarin or Cantonese. Further, all non-Asian older adults reported their primary language as either English or Spanish. Thus, neither birthplace nor primary language were adjusted for because the effect of these two individual characteristics was indistinguishable from the effect of Asian race.

Statistical analysis

We began by describing differences in the distribution of pre-pandemic baseline data between participants who completed and did not complete the COVID-19 follow-up assessment within Asian and non-Asian older adults. Examining these differences allowed us to assess whether, for example, older adults with higher levels of perceived discrimination or worse mental health symptoms were more likely to not have responded to the COVID-19 follow-up assessment. We then described changes in self-reported everyday discrimination and mental and physical health (depression and anxiety symptoms, level of functioning, and sleep difficulties) within Asian and non-Asian older adults before and during COVID-19. Afterwards, we examined the association between self-reported discrimination and mental and physical health outcomes before and during

TABLE 1 Distribution of pre-pandemic baseline variables among Asian and non-Asian older adults by whether they completed the COVID-19 follow-up assessment.

Pre-pandemic baseline variables	Asian (<i>n</i> = 102)			Non-Asian (<i>n</i> = 205) ^a		
	COVID-19 Follow-up (<i>n</i> = 56)	No COVID-19 Follow-up (<i>n</i> = 46)	<i>P</i>	COVID-19 Follow-up (<i>n</i> = 109)	No COVID-19 Follow-up (<i>n</i> = 96)	<i>P</i>
Outcomes: self-reported health						
Depression symptoms, GDS-15, mean (SD)	7.0 (3.3)	7.2 (3.2)	0.77	4.5 (3.0)	5.0 (3.1)	0.30
Anxiety symptoms, GAD-7, mean (SD)	4.3 (4.6)	5.3 (4.7)	0.27	6.3 (4.3)	6.9 (4.7)	0.39
Level of functioning, Late-Life FDI, mean (SD)	123.1 (22.3)	122.5 (27.4)	0.89	114.6 (26.8)	115.4 (26.1)	0.82
Sleep difficulties, mean (SD)	9.9 (4.0)	9.1 (3.9)	0.29	9.0 (3.6)	8.6 (3.7)	0.45
Exposure: everyday discrimination, mean (SD)	4.5 (7.4)	5.1 (6.4)	0.68	6.7 (8.1)	7.4 (9.2)	0.56
Moderators: social support and social cohesion						
Social support, mean (SD)	1.4 (0.6)	1.2 (0.6)	0.14	1.4 (0.5)	1.3 (0.6)	0.16
Social cohesion, mean (SD)	7.9 (1.9)	8.0 (2.3)	0.83	7.8 (2.8)	7.8 (2.9)	0.90
Sociodemographic characteristics						
Age, <i>n</i> (%)						
60–64	0 (0.0%)	2 (4.3%)	0.27	12 (11.0%)	7 (7.3%)	0.40
65–74	20 (35.7%)	14 (30.4%)		55 (50.5%)	44 (45.8%)	
75+	36 (64.3%)	30 (65.2%)		42 (38.5%)	45 (46.9%)	
Gender, <i>n</i> (%)						
Male	12 (21.4%)	11 (23.9%)	0.77	13 (11.9%)	23 (24.0%)	0.02
Female	44 (78.6%)	35 (76.1%)		96 (88.1%)	73 (76.0%)	
Education, <i>n</i> (%)						
Less the high school	14 (25.0%)	25 (54.3%)	0.002	36 (33.0%)	36 (37.5%)	0.50
High school or higher	42 (75.0%)	21 (45.7%)		73 (67.0%)	60 (62.5%)	
Household size, mean (SD)	1.8 (1.0)	1.9 (0.9)	0.64	2.1 (2.8)	1.9 (1.6)	0.50
Birthplace, <i>n</i> (%)						
Foreign born	56 (100.0%)	46 (100.0%)	NA	59 (55.1%)	49 (52.7%)	0.73
US born	0 (0.0%)	0 (0.0%)		48 (44.9%)	44 (47.3%)	
Primary language, <i>n</i> (%)						
English	0 (0.0%)	1 (2.2%)	0.02	34 (31.2%)	31 (32.3%)	0.31
Spanish	0 (0.0%)	0 (0.0%)		75 (68.8%)	63 (65.6%)	
Mandarin	32 (57.1%)	14 (30.4%)		0 (0.0%)	2 (2.1%)	
Cantonese	24 (42.9%)	31 (67.4%)		0 (0.0%)	0 (0.0%)	
Intervention condition, <i>n</i> (%)						
PMSB	31 (55.4%)	20 (43.5%)	0.23	46 (42.2%)	56 (58.3%)	0.01
EUC	25 (44.6%)	26 (56.5%)		63 (57.8%)	40 (41.7%)	

GDS-15, Geriatric Depression Scale-15; GAD-7, Generalized Anxiety Disorder-7; Late-life FDI, Late-Life Functioning and Disability Instrument; PMSB, Positive Minds-Strong Bodies; EUC, Enhanced Usual Care; NA, Not Applicable.

^aThe non-Asian groups includes older adults who self-identified as either non-Latinx White (*n* = 31), non-Latinx Black (*n* = 24), American Indian (*n* = 1), Latinx (*n* = 136), and other-race (*n* = 9).

COVID-19 using linear regression models and tested whether these associations were stronger among Asian compared with non-Asian older adults. Mental and physical health outcomes were separately modeled as the dependent variable. Further, separate linear regression models were estimated using baseline pre-pandemic data and COVID-19 follow-up data. However, because self-reports before and during COVID-19 were likely

correlated within individuals, regression models were estimated using a system of two linear equations, one using the baseline pre-pandemic data and another the COVID-19 follow-up data. These two regressions are related because the error term associated with the dependent variable may be correlated. By explicitly modeling this potential correlation, we could also test whether the effect of discrimination on health outcomes

was stronger during COVID-19 compared with the pre-pandemic period. The system of equations representing this conceptualization was as follows:

$$y_i^0 = \beta_1^0 + \beta_2^0 \text{Asian}_i + \beta_3^0 \text{Discrimination}_i^0 + \beta_4^0 (\text{Asian}_i \times \text{Discrimination}_i^0) + \beta_5^0 \text{Social Support}_i^0 + \beta_6^0 \text{Social Cohesion}_i^0 + \beta_7^0 X_i + u_i^0$$

$$y_i^1 = \beta_1^1 + \beta_2^1 \text{Asian}_i + \beta_3^1 \text{Discrimination}_i^1 + \beta_4^1 (\text{Asian}_i \times \text{Discrimination}_i^1) + \beta_5^1 \text{Social Support}_i^1 + \beta_6^1 \text{Social Cohesion}_i^1 + \beta_7^1 X_i + u_i^1$$

where y_i^0 represents an outcome variable for older adult i pre-pandemic and y_i^1 represents an outcome variable for older adult i during COVID-19. The superscript “0” is used to indicate a self-reported measure at the pre-pandemic baseline assessment, and the superscript “1” is used to indicate a self-reported measure at the COVID-19 follow-up. X_i is the vector of covariates that were adjusted for (i.e., age, sex, education level, and intervention condition). The error terms u_i^0 and u_i^1 are allowed to be correlated.

In the above system of equations, the parameter β_3^0 represents the effect of everyday discrimination pre-pandemic and the parameter β_4^0 tests whether this effect was stronger among Asian compared with non-Asian older adults. Analogously, the parameter β_3^1 represents the effect of everyday discrimination during COVID-19 and the parameter β_4^1 tests whether this effect was stronger among Asian compared with non-Asian older adults. Finally, we tested whether social support and social cohesion moderated the association between discrimination and health outcomes by adding two-way interactions to the above system of equations between self-reported discrimination and social support and cohesion. All analyses were performed in the Stata software version 15 (48).

Results

Descriptive characteristics of study sample

In Table 1, we present the pre-pandemic baseline distribution of all study variables for Asian and non-Asian older adults by whether they completed the COVID-19 follow-up assessment. Asian older adults who were re-contacted and completed the COVID-19 follow-up had pre-pandemic baseline GDS-15 and GAD-7 scores indicative of mild depression (34) and minimal anxiety (35), respectively. Their Late-Life FDI scores indicated moderate functional limitations (39). Most of these older adults were 75 years and older (64.3%) and the majority were females (78.6%). Three fourths reported having

a high school degree and above. All were foreign born and reported their primary language as either Mandarin (57.1%) or Cantonese (42.9%). Except for education level and primary language, no significant differences in pre-pandemic baseline data were observed among Asian older adults who completed the COVID-19 follow-up compared with Asian older adults who did not. This result suggested that Asian older adults with worse health outcomes, higher levels of discrimination, and lower levels of social support were not less likely to complete the COVID-19 follow-up assessment.

As shown in Table 1, non-Asian older adults who completed the COVID-19 follow-up were similar to Asian older adults in that they had baseline GDS-15, GAD-7, and Late-Life FDI scores indicative of mild depression (34), mild anxiety (35), and moderate functional limitations (39). Most of these non-Asian older adults were between 65 and 74 years old at baseline (50.5%), the majority were females (88.1%), and more than two thirds had a high school degree or more (67.0%). More than half (55.1%) were foreign born and they reported their primary language to be either English (31.2%) or Spanish (68.8%). Except for gender and intervention condition, we also found that non-Asian older adults with worse health outcomes, higher levels of discrimination, and lower levels of social support were equally likely to complete the COVID-19 follow-up assessment (i.e., no significant differences in pre-pandemic data were observed between non-Asian older adults who completed the COVID-19 follow-up and non-Asian older adults who did not).

Changes in self-reported discrimination and health outcomes within individuals before and during COVID-19

In Figure 2, we present changes in everyday discrimination and health outcomes within Asian and non-Asian older adults before and during the COVID-19 pandemic. As shown in Figure 2A, before and during the pandemic Asian older adults reported lower levels of everyday discrimination compared with non-Asian older adults. Further, both Asian and non-Asian older adults reported less experiences of day-to-day unfair treatment during the pandemic compared with before the pandemic. However, lower levels of everyday discrimination during the pandemic were not significantly different compared with their pre-pandemic levels either among Asian older adults (4.52 before vs. 2.58 during COVID-19; $p = 0.10$) or among non-Asian older adults (6.68 before vs. 5.46 during COVID-19; $p = 0.25$).

Changes in depression and anxiety symptoms, level of functioning, and sleep difficulties within individuals before and during COVID-19 are presented in Figures 2B–E. Both, before and during the pandemic, Asian older adults reported higher depression symptoms and more sleep difficulties than non-Asian

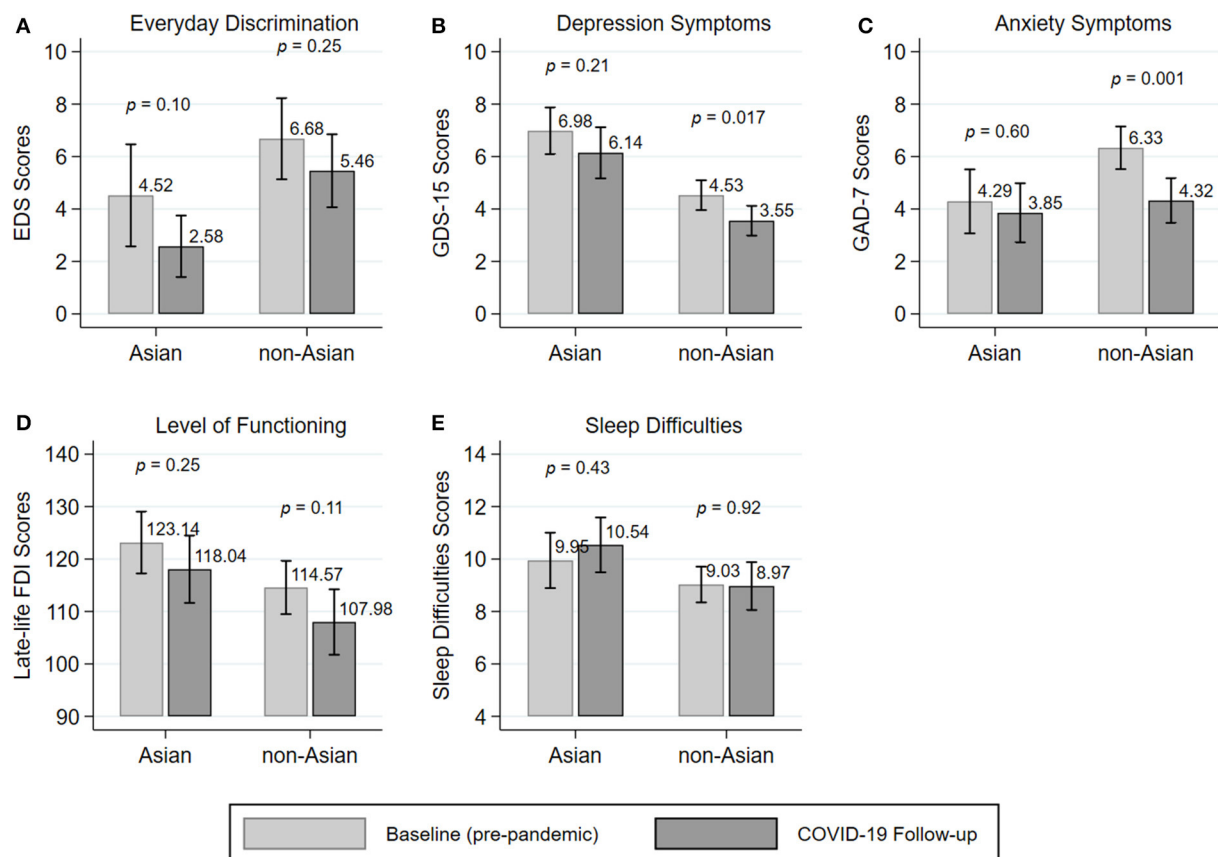


FIGURE 2
Changes in self-reported discrimination (A) and mental outcomes (B,C) and physical outcomes (D,E) within individuals before and during COVID-19.

older adults. In addition, Asian older adults reported less anxiety symptoms and higher levels of functioning before and during COVID-19 than non-Asian older adults. Among Asian older adults, no change in either depression and anxiety symptoms, level of functioning, or sleep difficulties was observed from before the pandemic to during the pandemic. In contrast, among non-Asian older adults a significant decrease in depression and anxiety symptoms was observed from before to during the pandemic (depression symptoms: 4.53 before vs. 3.55 during COVID-19; $p = 0.017$; anxiety symptoms: 6.33 before vs. 4.32 during COVID-19; $p = 0.001$).

Association between self-reported discrimination and health outcomes before and during COVID-19

Linear regression model estimates for the effect of everyday discrimination on health outcomes are presented in Table 2. As shown in Table 2, everyday discrimination was not associated

with either worse depression and anxiety symptoms, lower levels of functioning, or increased sleep difficulties before the pandemic [column “Baseline (pre-pandemic)”. In contrast, everyday discrimination was linked to higher depression (coefficient: 0.12; 95% Confidence Interval (CI): 0.04–0.20) and anxiety symptoms (coefficient: 0.21; 95% CI: 0.09–0.33) and lower levels of functioning (coefficient: -0.81 ; 95% CI: -1.47 – -0.14) during the pandemic [column “COVID-19 follow-up”]. Only the impact of everyday discrimination on depression symptoms appeared to be significantly stronger during the pandemic compared with before the pandemic. To test whether the effect of self-reported discrimination was stronger among Asian compared with non-Asian older adults, the models from Table 2 included two-way interactions between Asian race and everyday discrimination (non-Asian race interacted with everyday discrimination served as the referent group). None of these two-way interactions were statistically significant, which suggested that a unit increase in everyday discrimination during COVID-19 had the same impact on Asian and non-Asian older adults’ health outcomes.

TABLE 2 Association between self-reported discrimination and health outcomes before and during COVID-19.

	A. Outcome variable: depression symptoms (GDS-15 scores)		B. Outcome variable: anxiety symptoms (GAD-7 scores)	
	Baseline (pre-pandemic)	COVID-19 follow-up	Baseline (pre-pandemic)	COVID-19 follow-up
	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]
Race/ethnicity				
Non-Asian (reference)				
Asian	2.19 [0.91, 3.48]*	2.57 [1.30, 3.84]*	−2.01 [−3.83, −0.19]*	0.10 [−1.65, 1.85]
Everyday discrimination	−0.05 [−0.12, 0.03]	0.12 [0.04, 0.20]*+	0.08 [−0.04, 0.19]	0.21 [0.09, 0.33]*
Race/ethnicity x Everyday discrimination				
Non-Asian (reference)				
Asian	0.06 [−0.06, 0.18]	0.06 [−0.13, 0.25]	0.04 [−0.15, 0.22]	0.09 [−0.20, 0.37]
Social support	−0.08 [−1.04, 0.88]	−0.63 [−1.47, 0.22]	−1.17 [−2.62, 0.28]	−0.23 [−1.48, 1.03]
Social cohesion	−0.08 [−0.27, 0.11]	−0.10 [−0.25, 0.04]	0.11 [−0.19, 0.40]	−0.12 [−0.34, 0.10]
Adjustment variables^a				
Age	−0.02 [−0.10, 0.06]	0.04 [−0.03, 0.12]	−0.08 [−0.19, 0.02]	0.01 [−0.09, 0.11]
Gender				
Male (reference)				
Female	0.01 [−1.39, 1.42]	0.12 [−1.26, 1.50]	−0.66 [−2.57, 1.26]	0.51 [−1.33, 2.35]
Education				
Less than high school (reference)				
High school or more	−0.32 [−1.48, 0.83]	−0.76 [−1.88, 0.36]	−0.22 [−1.80, 1.36]	−0.90 [−2.39, 0.59]
Intervention condition				
EUC (reference)				
PMSB	0.15 [−0.88, 1.18]	−0.77 [−1.78, 0.25]	0.69 [−0.71, 2.10]	0.28 [−1.07, 1.63]
	C. Outcome variable: Level of functioning (Late-life FDI scores)		D. Outcome variable: Sleep difficulties	
	Baseline (pre-pandemic)	COVID-19 follow-up	Baseline (pre-pandemic)	COVID-19 follow-up
	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]
Race/ethnicity				
non-Asian (reference)				
Asian	8.80 [−0.96, 18.55]	11.02 [−0.07, 22.11]	1.80 [0.22, 3.39]*	1.60 [−0.14, 3.34]
Everyday discrimination	−0.27 [−0.79, 0.25]	−0.81 [−1.47, −0.14]*	0.05 [−0.04, 0.14]	0.04 [−0.07, 0.15]
Race/ethnicity x Everyday discrimination				
Non-Asian (reference)				
Asian	0.11 [−0.74, 0.95]	0.16 [−1.39, 1.70]	−0.09 [−0.23, 0.05]	−0.02 [−0.27, 0.24]
Social support	−0.17 [−6.87, 6.52]	3.05 [−3.78, 9.88]	0.26 [−0.87, 1.40]	−0.27 [−1.40, 0.85]
Social cohesion	1.45 [0.12, 2.77]*	1.13 [−0.07, 2.33]	0.05 [−0.18, 0.27]	−0.13 [−0.33, 0.07]
Adjustment variables^a				
Age	−0.98 [−1.61, −0.36]*	−1.24 [−1.95, −0.54]*	0.04 [−0.06, 0.14]	0.08 [−0.02, 0.19]
Gender				
Male (reference)				
Female	−8.94 [−19.96, 2.08]	−9.62 [−22.11, 2.86]	−0.11 [−1.87, 1.65]	−0.09 [−2.02, 1.83]
Education				
Less than high school (reference)				
High school or more	7.04 [−1.99, 16.07]	10.23 [0.12, 20.33]*	0.06 [−1.38, 1.50]	−0.02 [−1.58, 1.54]
Intervention condition				
EUC (reference)				
PMSB	−1.77 [−9.80, 6.26]	2.13 [−6.98, 11.25]	−0.22 [−1.50, 1.06]	−0.69 [−2.09, 0.72]

GDS-15, Geriatric Depression Scale-15; GAD-7, Generalized Anxiety Disorder-7; Late-life FDI, Late-life Functioning and Disability Instrument; Coeff., coefficient; PMSB, Positive Minds-Strong Bodies; EUC, Enhanced Usual Care.

^aAdjustment variables of age, sex (male or female), education level (less than high school or high school and above), and intervention condition (PMSB or EUC) were all measured at baseline.

*p < 0.05; + Statistically significant difference at the 0.05 level compared with baseline (pre-pandemic).

None of the covariates that were adjusted for were significantly associated with the outcomes either before or during COVID-19 except for level of functioning. Results from [Table 2](#) indicated that older age was associated with lower levels of functioning before and during COVID-19. In addition, during COVID-19, participants with a high school degree and above had higher levels of functioning compared to those who reported that they did not graduate from high school. Notably, although Asian older adults in the PMSB group were more likely to complete the COVID-19 follow-up assessment compared to non-Asian older adults, differences in intervention condition were also not significantly associated with the outcomes. This result suggested that everyday discrimination during COVID-19 having the same impact on Asian and non-Asian older adults was not related to differences in intervention condition.

Social support and social cohesion as potential moderators altering the association between self-reported discrimination and health outcomes

To investigate whether social support and social cohesion moderated the negative impact of everyday discrimination on health outcomes during the pandemic, we estimated models that included two-way interactions between everyday discrimination and social support and cohesion. As shown in [Table 3](#), neither social support nor social cohesion were associated with lower depression and anxiety symptoms or less sleep difficulties either before [column “Baseline (pre-pandemic)”] or during COVID-19 [column “COVID-19 follow-up”]. Although this result was also observed for level of functioning pre-pandemic, social cohesion was found to be associated with increased levels of functioning during the pandemic ($b: 2.24$; 95% CI: $0.72-3.76$), and it also significantly buffered against the negative effect of discrimination ($b: -0.23$; 95% CI: $-0.42- -0.03$). While social support alone was not associated with lower depression symptoms in the COVID-19 follow-up data, the results from [Table 3](#) indicated that it significantly buffered against the negative effect of discrimination on depression symptoms during the pandemic. No other two-way interaction was statistically significant.

In [Figure 3](#), we depict simple slopes representing the moderating effect of social support altering the association between discrimination and depression symptoms ([Figure 3A](#)) and the moderating effect of social cohesion altering the association between discrimination on level of functioning ([Figure 3B](#)) during COVID-19. As shown in [Figure 3A](#), increased discrimination (i.e., going from no discrimination to high levels of discrimination) led to worse depression symptoms (higher GDS-15 scores) for both participants without social support and participants with high levels of

social support. However, increased discrimination worsened depression symptoms more for participants with no social support compared to participants with high levels of social support. Similarly, increased discrimination led to lower levels of functioning (lower Late-life FDI scores) for both participants without social cohesion and participants with high levels of social cohesion ([Figure 3B](#)). However, increased discrimination lowered level of functioning more among participants without social cohesion compared to participants with high social cohesion.

Discussion

The present study is among the first to investigate within-person changes in self-reported discrimination before and during the COVID-19 pandemic among Asian and non-Asian US older adults. Contrary to our expectations, we found that Asian older adults reported fewer experiences of day-to-day unfair treatment (everyday discrimination) during the pandemic compared with before the pandemic (although this difference was not significant at the $\alpha = 0.05$ level). Increased social isolation during COVID-19 may have resulted in decreased opportunities to experience discrimination. For example, some news reports have suggested that, to better protect themselves against exposure to COVID-19, many Asian older adults started isolating socially even before the stay-at-home orders were enforced ([49](#)). Recent studies also demonstrate that Asian older adults are at increased risk of social isolation from family and friends ([50, 51](#)). One study showed that during the pandemic people over the age of 50 had less than half the number of close contacts than those under the age of 30 ([52](#)). Since US Asian older adults appeared more likely to socially isolate during COVID-19, and older adults in general had fewer close contacts, they might have been less likely to be exposed to everyday situations where they could experience discrimination.

Lower levels of perceived everyday discrimination during COVID-19 among Asian older adults might also be related to the specific characteristics of our sample. As shown in [Table 1](#), Asian older adults were all foreign-born and reported their primary language as Mandarin or Cantonese. A prior study showed that US born Asian and Black individuals tend to report significantly more race-related discrimination than their foreign-born counterparts, suggesting that increased acculturation may shape the experience and perception of racial and ethnic discrimination ([53](#)).

Our results also indicate that average levels of depression and anxiety symptoms among Asian older adults remained stable during COVID-19 compared with their pre-pandemic levels. In addition, non-Asian older adults reported lower anxiety and depression symptoms during COVID-19 compared with before COVID-19. Older adults have experienced disproportionately greater adverse effects from the pandemic ([54](#)). However, data on

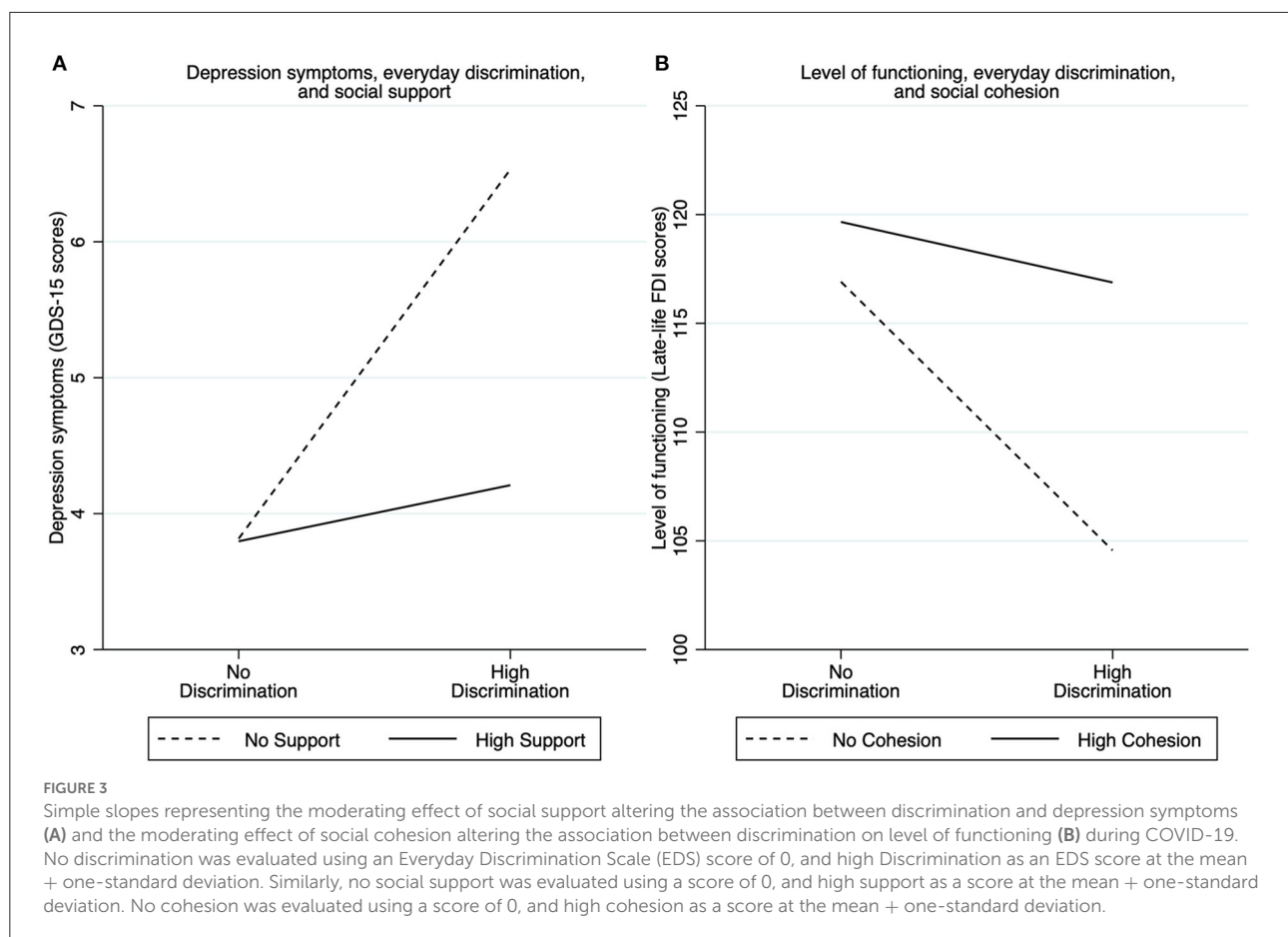
TABLE 3 Social support and social cohesion as potential moderators altering the association between everyday discrimination and health outcomes.

	E. Outcome variable: depression symptoms (GDS-15 scores)		F. Outcome variable: anxiety symptoms (GAD-7 scores)	
	Baseline (pre-pandemic)	COVID-19 follow-up	Baseline (pre-pandemic)	COVID-19 follow-up
	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]
Race/ethnicity				
Non-Asian (reference)				
Asian	2.50 [1.40, 3.60]*	2.77 [1.67, 3.86]*	−1.82 [−3.33, −0.31]*	0.32 [−1.13, 1.77]+
Everyday discrimination	−0.07 [−0.32, 0.18]	0.26 [0.08, 0.43]*+	0.26 [−0.12, 0.64]	0.50 [0.26, 0.75]*
Social support	0.13 [−1.01, 1.26]	−0.01 [−1.06, 1.04]	−1.05 [−2.78, 0.67]	0.42 [−1.11, 1.94]
Social cohesion	−0.12 [−0.34, 0.10]	−0.13 [−0.32, 0.06]	0.19 [−0.15, 0.53]	−0.04 [−0.32, 0.25]
Everyday discrimination x Social support	−0.03 [−0.17, 0.11]	−0.12 [−0.23, −0.004]*	−0.03 [−0.24, 0.18]	−0.13 [−0.30, 0.03]
Everyday discrimination x Social cohesion	0.01 [−0.01, 0.03]	0.00 [−0.02, 0.03]	−0.02 [−0.05, 0.02]	−0.02 [−0.06, 0.02]
Adjustment variables^a				
Age	−0.03 [−0.10, 0.05]	0.05 [−0.03, 0.12]	−0.09 [−0.20, 0.02]	0.02 [−0.08, 0.12]
Gender				
Male (reference)				
Female	0.02 [−1.38, 1.43]	0.22 [−1.16, 1.59]	−0.79 [−2.72, 1.14]	0.64 [−1.16, 2.45]
Education				
Less than high school (reference)				
High school or more	−0.37 [−1.52, 0.78]	−0.88 [−2.01, 0.25]	−0.24 [−1.82, 1.33]	−0.91 [−2.40, 0.58]
Intervention condition				
EUC (reference)				
PMSB	0.21 [−0.82, 1.24]	−0.74 [−1.73, 0.26]	0.62 [−0.79, 2.03]	0.34 [−0.96, 1.65]
G. Outcome variable: Level of functioning (Late-life FDI scores)				
	Baseline (pre-pandemic)	COVID-19 follow-up	Baseline (pre-pandemic)	COVID-19 follow-up
	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]	Coeff. [95% CI]
Race/ethnicity				
Non-Asian (reference)				
Asian	8.95 [0.38, 17.53]*	11.65 [1.90, 21.39]*	1.34 [−0.03, 2.71]	1.53 [0.01, 3.06]*
Everyday discrimination	0.53 [−1.20, 2.25]	0.12 [−1.29, 1.53]	−0.16 [−0.46, 0.13]	−0.01 [−0.24, 0.23]
Social support	2.36 [−5.51, 10.23]	−0.57 [−8.93, 7.78]	0.13 [−1.22, 1.47]	−0.26 [−1.66, 1.13]
Social cohesion	1.36 [−0.18, 2.90]	2.24 [0.72, 3.76]*	−0.04 [−0.31, 0.22]	−0.17 [−0.43, 0.09]
Everyday discrimination x Social support	−0.56 [−1.52, 0.41]	0.53 [−0.37, 1.43]	0.04 [−0.12, 0.21]	0.00 [−0.15, 0.15]
Everyday discrimination x Social cohesion	−0.02 [−0.18, 0.14]	−0.23 [−0.42, −0.03]*	0.02 [−0.01, 0.05]	0.01 [−0.03, 0.04]
Adjustment variables^a				
Age	−1.00 [−1.62, −0.38]*	−1.22 [−1.91, −0.52]*	0.04 [−0.06, 0.14]	0.08 [−0.02, 0.19]
Gender				
Male (reference)				
Female	−9.53 [−20.59, 1.52]	−10.22 [−22.56, 2.13]	0.05 [−1.71, 1.81]	−0.09 [−2.02, 1.84]
Education				
Less than high school (reference)				
High school or more	6.98 [−2.02, 15.98]	11.67 [1.57, 21.77]*	0.12 [−1.32, 1.56]	−0.05 [−1.62, 1.53]
Intervention condition				
EUC (reference)				
PMSB	−1.74 [−9.78, 6.30]	2.53 [−6.39, 11.45]	−0.13 [−1.41, 1.15]	−0.71 [−2.09, 0.68]

GDS-15, Geriatric Depression Scale-15; GAD-7, Generalized Anxiety Disorder-7; Late-life FDI, Late-life Functioning and Disability Instrument; Coeff., coefficient; PMSB, Positive Minds-Strong Bodies; EUC, Enhanced Usual Care.

^aAdjustment variables of age, sex (male or female), education level (less than high school or high school and above), household size, and intervention condition (PMSB or EUC) were all measured at baseline.

* $p < 0.05$; + Statistically significant difference at the 0.05 level compared with baseline (pre-pandemic).



the initial mental health effects of the pandemic on older adults present a much more nuanced picture. While some studies have shown that older adults' mental health deteriorated during the initial and later phases of the COVID-19 pandemic compared with before the pandemic (55, 56), our results are consistent with contrasting evidence suggesting a more limited negative effect on older adults' mental health (57, 58). A longitudinal prospective cohort study of older adults in the Netherlands, for example, showed that absolute changes in depression and anxiety symptoms during the pandemic compared with pre-pandemic were small and nonsignificant (57). In a sample of US older adults with pre-existing depression from the OPTIMUM clinical trial (a multisite comparative effectiveness trial of antidepressant treatments), depression and anxiety symptoms in the first 2 months of the pandemic were significantly lower than their baseline pre-pandemic and pre-treatment levels, indicating that participants did not relapse to pre-treatment levels of depression and anxiety at the beginning of the pandemic (58). In the present study, we used a sample of US older adults with pre-existing elevated depression or anxiety symptoms from the PMSB clinical trial. Our results suggest that older adults with pre-existing depression or anxiety might show resilience to the

negative effects of the pandemic on mental health. This resilience to adverse mental health outcomes in late life has been suggested to reflect an interaction of internal factors (e.g., biological stress response, cognitive capacity, personality) and external resources (e.g., social status, financial stability) (54, 59). Indeed, prior evidence demonstrates that older adults tend to have lower stress reactivity and better emotional regulation and wellbeing than younger adults (54, 60).

We found that everyday discrimination was not associated with worse depression and anxiety symptoms, lower levels of functioning, or increased sleep difficulties pre-pandemic. Older adults from the present study were eligible for the PMSB trial based on pre-existing mental and physical conditions, and they were also not receiving mental health services. There is increasing evidence suggesting that people with mental illnesses who are not receiving care avoid treatment because of stigma and expected discrimination (61). Thus, the negative effects of perceived everyday discrimination could have already impacted the mental and physical health of older adults in our sample prior to the pandemic. In contrast, in the COVID-19 follow-up, we observed a significant positive correlation between self-reported discrimination and depression and anxiety symptoms

and a negative correlation between discrimination and level of functioning, suggesting that the pandemic might have exacerbated the negative impact of discrimination on health. Our findings also suggested that this negative impact of everyday discrimination on health outcomes during COVID-19 appeared to affect Asian and non-Asian older adults similarly. That is, the effect of discrimination on health outcomes during COVID-19 was not stronger among Asian older adults compared to non-Asian older adults. Our results are consistent with recent studies demonstrating that racial discrimination has negatively impacted Asian populations during the pandemic (1, 2, 4), and they are also consistent with prior evidence demonstrating that racial discrimination negatively affects other racial and ethnic groups, including African American, Latinx, and White populations (3). Because discrimination did not appear to affect older adults' health before the pandemic, our results thus suggest that the pandemic might have made the effect of discrimination more salient to older adults overall (and not only Asian older adults).

A plausible explanation for why discrimination negatively impacted mental and physical health during but not pre-pandemic is that older adults may have had fewer resources to cope with discrimination during the pandemic. For example, a recent study showed that US Asian adults who experienced discrimination during COVID-19 appeared to use social media as a coping tool, and social media use was associated with better subjective wellbeing (62). Prior studies suggest that social media interactions with close contacts (such as private messaging and posting) might protect against the negative effect of discrimination because such interactions have a robust association with perceived social support (62, 63). However, US Asian older adults (aged 60 and above) who experienced discrimination during COVID-19 had the lowest levels of social media use (62). A recent survey also showed that over one-third of Asian American older adults in New York City did not have access to the internet during COVID-19, and over half were not comfortable using the internet even if they had access to it (13, 64).

Another plausible explanation is that the negative associations observed during the pandemic could be related to the specific type of discrimination measured in the present study. Since everyday discrimination assessed day-to-day experiences with unfair treatment, older adults who reported discrimination during COVID-19 are potentially more likely to have experienced such discrimination on a personal level (rather than indirectly through channels such as media, for example). A prior study found that observed discrimination through media during the COVID-19 pandemic was not a strong predictor of greater anxiety, vigilance, and worry (65). On the other hand, experiencing discrimination on a personal level during the pandemic was more traumatizing and intense (65).

Our last set of results indicated that social support and social cohesion offset the impact of everyday discrimination

on depression symptoms and level of functioning during the COVID-19 pandemic, despite not being directly linked to better mental and physical outcomes. We found that although everyday discrimination during COVID-19 had a negative impact on depression symptoms and level of functioning for all older adults, the negative effect of discrimination on these two outcomes was attenuated at higher levels of social support and cohesion. This result supports the stress-buffering model, which posits that social support protects mental health through the indirect pathway of interacting with the stressor (i.e., discrimination) rather than by being directly associated with lower levels of psychological distress (28). According to our results, the stress-buffering effect occurred because social support and cohesion were not directly associated with lower psychological distress. Instead, higher levels of social support and cohesion appeared to lessen older adults' reaction to discrimination during the pandemic. The lack of direct association between social support and cohesion and health outcomes could also be explained by the fact that most older adults in our sample were foreign-born. A recent study on the association between social support and health outcomes among first-generation immigrant, second-generation immigrant, and non-immigrant US older adults found that while social support is strongly and positively associated with health in the general population, this association is null and in some cases even reversed among immigrants in the first and second generations (66). Nevertheless, our finding that social support and cohesion partially offset the impact of everyday discrimination is consistent with a sizable body of work showing that social support is a protective factor that buffers against the negative effect of discrimination on health, including during the COVID-19 pandemic (4, 30, 31). The protective effect of social support may be especially salient to Asian populations whose traditional cultural values of collectivism emphasize the importance of positive social relationships for their wellbeing (67).

Limitations and conclusion

Our study has several limitations. The COVID-19 follow-up assessment started in March 2021, a year after the World Health Organization declared the COVID-19 outbreak a global pandemic. Thus, the effect of the COVID-19 pandemic on discrimination and mental and physical health at the early stages of the pandemic may differ from those we found in the present study. For example, a prior longitudinal study found that depression and anxiety symptoms sharply increased right at the beginning of the pandemic, but they rapidly declined within the next 20 weeks (68). Our study is thus limited in its ability to characterize full trajectories of discrimination and mental and physical outcomes before and during the pandemic. In addition, due to the small sample size, older

adults were categorized into Asian and non-Asian groups. Future studies that include adequate numbers of racially and ethnically diverse older adults could shed light on the effect of discrimination on health outcomes during COVID-19 for other racial and ethnic groups, which may yield different results. While our study found that Asian and non-Asian groups reported lower perceived everyday discrimination during the COVID-19 follow-up, our study did not assess COVID-19 related discrimination specifically, but rather day-to-day experiences of unfair treatment. Response patterns might have been different if discrimination was assessed in relation to the COVID-19 pandemic, particularly among Asian older adults. In addition, internal consistency for our measures of sleep difficulties and social support were low (<0.7). We did not find evidence that everyday discrimination was associated with increased sleep difficulties either before or during the pandemic. We also found that social support buffered against the negative effect of discrimination on depression symptoms during the pandemic, but it was not directly associated with either outcome. Given the low internal consistency, we cannot rule out the possibility that our results could have been different had these measures had better internal consistency. Lastly, our study sample was comprised of older adults previously enrolled in an RCT, and eligible based on elevated depression or anxiety symptoms and limited physical functioning, so our findings might not necessarily be applicable to the general population of US older adults. In addition, exclusion criteria included participants disclosing substance use disorders, but prior studies suggest that perceived racial discrimination is associated with increased risk of substance use (69, 70). Although only eight participants were excluded from the RCT because of substance use, future studies examining the association between discrimination and increased risk of substance use among older adults amid the COVID-19 pandemic are needed.

Notwithstanding these limitations, our study represents one of the first efforts to investigate within-person changes in day-to-day experiences of unfair treatment before and during the COVID-19 pandemic, and how these experiences of discrimination might have impacted health outcomes differently before vs. during the pandemic among Asian and non-Asian older adults. Our findings suggest that although older adults might have been less likely to be exposed to everyday situations where they could experience discrimination during COVID-19, the pandemic might still have exacerbated the negative impact of discrimination on health outcomes. However, social support and social cohesion can act as protective factors that buffer against this increased negative impact of discrimination. Our results suggest that public health interventions aimed at reducing everyday discrimination and emphasizing social support can potentially improve health outcomes of all US older adult populations, particularly those with pre-existing depression, anxiety, and functional limitations.

Data availability statement

The data used to obtain the results presented in this manuscript is not publicly available because it involves a racial and ethnic minority sample including participants with depression, anxiety, and functional limitations. The author/s are not able to release the data used in the current manuscript given the sensitivity of the data and their agreements with the Institutional Review Boards of the participating institutions. Reasonable requests to access the data can be directed to Sheri Markle, at smarkle@mgh.harvard.edu.

Ethics statement

Study procedures involving human participants were reviewed and approved by the Institutional Review Boards of Massachusetts General Hospital/Partners HealthCare and New York University, with ceded reviews for partnering Community-Based Organizations conducting human subjects research. The patients/participants provided their written informed consent to participate in this study.

Author contributions

LZ, MC-G, and MA contributed to the conception, design of the study, and wrote the first draft of the manuscript. LZ and MC-G organized the database and performed the statistical analysis. ZL, XO, and FZ wrote sections of the manuscript. All authors contributed to manuscript revision and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Disaggregating the data: Diversity of COVID-19 stressors, discrimination, and mental health among Asian American communities

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Much of the public discourse as well as research regarding the negative impact of COVID-19-related anti-Asian discrimination has been conducted at the broad racial group level, yet data aggregation masks critical points of diversity among Asian Americans. We conducted an online survey of 620 Asian American adults in December 2020 and examined whether there were any demographic differences—including by ethnic subgroup and Chinese street race (being Chinese or being mistaken as Chinese)—in their experiences of COVID-19-related stress, direct and vicarious discrimination, and psychological outcomes. Our analyses found that younger age was correlated with higher reports of pandemic stress, discrimination, distress, and worry. Female and U.S.-born participants reported higher levels of pandemic stress and vicarious discrimination, but there were no gender or nativity differences in levels of direct discrimination. Being uninsured was also related to higher levels of pandemic stress, discrimination, and distress. East Asian Americans reported significantly lower frequencies of direct anti-Asian discrimination than did South Asian or Southeast Asian Americans, but the ethnic subgroups did not differ in their reports of vicarious discrimination. Of note, Chinese street race was not associated with either direct or vicarious discrimination. Separate hierarchical regression analyses for East Asian, South Asian, and Southeast Asian participants revealed that, regardless of ethnicity, racial discrimination significantly contributed to psychological distress and worry beyond the effects of pandemic stress. However, the three groups varied in the demographic indicators and COVID-19 stressors that were associated with psychological outcomes. Pandemic stress was more strongly associated with negative outcomes among South Asian Americans than East Asian and Southeast Asian Americans, and neither direct nor vicarious discrimination were associated with mental health among South Asian Americans. Direct discrimination, compared to vicarious discrimination, was a particularly robust predictor of both distress and worry among East Asian Americans. For Southeast Asian Americans, direct discrimination significantly predicted higher levels of

distress, whereas vicarious discrimination predicted higher levels of worry. Vicarious discrimination was not significantly related to distress across ethnic subgroups. Results suggest that practitioners and policy makers would benefit from attending to these within-group differences in Asian Americans' experiences during the pandemic.

KEYWORDS

Asian Americans, data disaggregation, COVID-19 discrimination, mental health, distress, worry

Introduction

From the very early days of the COVID-19 pandemic, there has been an alarming rise in xenophobic scapegoating and racial harassment of Asians, as China and the Chinese were blamed for the spread of the COVID-19 virus. Researchers have already documented a marked rise in Sinophobic content on both mainstream and fringe social media (1). #StopAAPIHate was launched in mid-March 2020 in the U.S. as an online portal to collect reports of anti-Asian hate incidents, and by December 2021, it had received a total of 10,905 incident reports, including verbal harassment, shunning, and physical attacks against not just Chinese internationals and Chinese Americans but also Asian Americans from across the United States (2). In addition to first-hand experiences of victimization, a steady stream of news about violence against Asian and Asian American women and older adults, sometimes resulting in deaths, has added to the sense that anti-Asian racism unleashed in the early days of COVID-19 (3) is not only unrelenting but is increasing over time.

Although much of the public discourse about anti-Asian hate and discrimination has referred to Asian Americans in the aggregate, and the efforts to combat anti-Asian hate have also used a more inclusive language that often included Pacific Islanders (such as in the frequently used social media hashtag #StopAAPIHate), the bulk of anti-Asian hate sentiments and assaults have been directed toward East Asian Americans and those who might be misidentified as Chinese (2). The designation of COVID-19 related discrimination and hate in pan-Asian terms implies that East, Southeast, and South Asian Americans have been impacted similarly by COVID-19 life stresses and discrimination; as such, the pan-Asian discourse overlooks the vast demographic differences that exist within Asian American communities and also erases historical and contemporary differences in racialization that may shape how they perceive and are impacted by racial discrimination that is experienced directly and vicariously. The present study sought to address the potential problems of treating Asian Americans as a monolithic population by disaggregating the data on pandemic stress,

direct and vicarious racial discrimination, and mental health outcomes across various points of demographic diversity (e.g., ethnicity, nativity, age, gender, class) within Asian American population during the first year of the COVID-19 pandemic.

Diversity of racial experiences among Asian Americans

Asian American is a racial category imposed on a population that is more diverse in national origins and immigration histories than other racial groups in the U.S., with no one nationality group predominating and a vast diversity of languages spoken (4). From the earliest days of U.S. history, Asian immigrants, refugees, and asylum seekers have arrived with distinct ethnic, cultural, linguistic, and religious identities but have been cast into a pan-Asian racial category (e.g., as "Orientals") and seen as the embodiment of a foreign, dangerous, and inferior "East" in opposition to the "West." As the concept of race in the United States has been used—historically and contemporaneously—to support racism and to maintain racial hierarchy (5), racialization as Asian Americans has served to erase critical points of diversity. However, it is critical to recognize that different Asian groups have faced divergent forms of racialization and racism. Asian Americanist scholars e.g., (6, 7) have argued that non-White immigrants are either ideologically Whitenized or ideologically Blackened according to their perceived socioeconomic status, and thus the failure to conform to the model minority image has resulted in the ideological Blackening of Southeast Asian communities. For example, Southeast Asian (e.g., Vietnamese, Lao, Cambodian) American youth identified with Black youth, with whom they shared a class background (7). Another study found that while South Asians were generally likely to label people from the Indian subcontinent (e.g., Pakistan, India) as Asian, all other groups, including Black, Latino, White, and other Asian Americans were significantly less likely to label people from the Indian subcontinent as Asian (8).

Even within the broad Southeast Asian grouping, which includes those who trace their origins to nations in the Indochinese peninsula (e.g., Thailand, Vietnam, Cambodia, Laos) as well as those from the islands and archipelagos (e.g., the Philippines, Malaysia, Indonesia), vast differences exist. For example, because of the history of imperialism and colonization from the United States and Spain, Filipino Americans are largely Catholic English speakers (9) and thus racialized differently from Vietnamese, Cambodian, and other mainland Southeast Asians. Chutuape (10) found that Filipino American youth in her study resisted a panethnic Asian American identity because they perceived those characteristics and assumptions about Asian Americans applied only to East Asians (e.g., Chinese, Korean, Japanese) (10). Many Southeast Asians (Vietnamese, Cambodian, Lao, and Hmong) entered the U.S. as refugees escaping war and violence following the Vietnam War, who—with the exception of first-wave Vietnamese immigrants from more educated and affluent classes in Vietnam—have experienced more barriers and challenges in their educational and occupational attainment than East Asians (11).

South Asian Americans are frequently excluded from Asian American discourse (12), and many South and Southeast Asian Americans identify as being Brown Asian Americans whose racial experiences are distinct from those of East Asian Americans (13). For example, after the terrorist attacks on September 11, 2001, there was a sharp rise in violence and hate crimes toward those who are Muslim and/or perceived to be Muslim. Through this process, many Americans who trace their heritage to the Middle East, North Africa, and South Asia were subject to Islamophobia regardless of faith. These attacks on South Asian Americans continue to this day, with Sikh American and visibly Muslim Americans being especially targeted (14, 15). Studies prior to the COVID-19 pandemic found South Asians to be especially vulnerable to forms of institutional discrimination and microaggressions, even when compared to other Asian American subgroups (16, 17). Other studies had also found that discrimination against South Asian Americans were associated with an increase in depressive symptomatology following incidents of perceived discrimination, indicating the negative impact of discrimination on mental health (18, 19).

East Asian Americans, who are seen as the prototypical Asian Americans, have been racially vilified as the “yellow peril” throughout history of European and U.S. entanglements with East Asia, gaining force in the late 19th and early 20th century. The yellow peril racial trope cast the “yellow race” as posing economic, political, military, and cultural threats to the White race and led to a series of discriminatory and exclusion laws as well as the incarceration of Japanese Americans during the World War II (20). The yellow peril discourse casting East Asians (and in particular, Chinese, Chinese Americans, and other Asian Americans who are misidentified as Chinese) as a

foreign threat has resurfaced in Sinophobic infectious disease narratives (e.g., related to SARS and COVID-19) (21).

COVID-19 stress, discrimination, and distress

Despite the divergent historical and contemporary racialization experiences of various Asian American groups, much of the U.S. discourse around COVID-19-related stress and anti-Asian racism has referred to Asian Americans in the aggregate, and social science research has also followed suit. Although much of the public health data on the COVID-19 disease burden for Asian Americans are presented in the aggregate, there are compelling sociodemographic risk factors that vary widely across Asian ethnic groups (e.g., risk of exposure due to proportion of front-line workers, number of multigenerational households, barriers to healthcare, pre-existing health conditions, etc.) (22). A disaggregated analysis of COVID-19 case positivity, hospitalization, and deaths among Asian Americans in public hospital system in New York City found that South Asian patients had the highest rates of case positivity and hospitalization within Asian Americans, whereas Chinese Americans had the highest mortality rate of all racial and ethnic groups (23). Yet, the bulk of available research on Asian Americans’ mental health during the pandemic has not included an assessment of life stresses associated with the COVID-19 disease.

There have been a number of studies documenting the relationship between anti-Asian racial discrimination and mental health outcomes in Asian American communities in the aggregate. For example, in an analysis of data collected in April to June 2020, Hahm et al. (24) found that 68% of 211 Asian and Asian American young adults (ages 18–30) reported that they or a member of their family experienced COVID-19 related discrimination, with ~15% reporting verbal and/or physical assaults. In the same sample, these discrimination experiences were associated with increases in posttraumatic stress disorder symptoms (24). Several other studies have also pointed to a significant link between Asian Americans’ COVID-19 related racism and discrimination experiences and a host of negative mental health outcomes including symptoms of depression, post-traumatic stress, and anxiety (25–28).

Taken together, the association between anti-Asian discrimination and psychological distress appears to be well-established. Although many of the studies to date did not disaggregate their analyses by Asian ethnicities, some studies have sought to understand the link between discrimination and mental health separately or comparatively within Asian American ethnicities. For example, in an analysis of 245 Asian American adult surveyed, Woo and Jun (28) found that the effects of racial discrimination on depressive symptoms did not

differ between Chinese Americans and other Asian subgroups (28). A study of 636 Chinese and South Asian American adults residing in Chicago found that depressive symptoms were significantly higher among those who were surveyed after the start of the COVID-19 pandemic than those who were surveyed prior to the start of the pandemic. Specifically, they found that South Asian American, men, and younger adults surveyed after the start of the pandemic reported more depressive symptoms compared to East Asian Americans, women, and older adults (29). Hyunh et al. (26) found in their sample of 380 East and Southeast Asian American adults in Ohio that their respondents reported an increase in direct and indirect racial discrimination during the pandemic compared to the time before the pandemic, and racial discrimination during the pandemic was associated with higher anxiety and depression (26). Notably, although there were no differences between East Asian and Southeast Asian Americans in the level of COVID-19 related racial discrimination, those whose ethnic identity was not Chinese reported higher depression and anxiety than those who identified as Chinese.

A handful of studies have also focused solely on Chinese Americans, who have been more immediately targeted and blamed by politicians and media figures (e.g., “China virus,” “Kung flu”) in the public discourse. For example, in a study of 543 Chinese American parents and 230 of their children between ages 10 and 18 early in the pandemic, Cheah et al. (30) found that nearly half reported being targeted by anti-Asian discrimination and Sinophobia, and those who reported being targeted also had worse mental health outcomes (30). A study with 198 Chinese American college students found that perceived xenophobia and anxiety were higher in the early days of the pandemic compared to before (31). In a survey of 184 Chinese American adults, Litam and Oh (32) found that COVID-19-related racial discrimination was associated with increased depressive symptoms and decreased life satisfaction; moreover, middle-aged men reported more discrimination and depression than younger or older men or women (32). In a study of 342 East Asian and East Asian American adults who were surveyed at three timepoints 2 weeks apart, (33), COVID-19 racism at each time point predicted later psychological distress. These disaggregated studies of COVID-19 related discrimination and mental health suggest that there are divergent experiences among Asian Americans depending on one’s social location.

The present study

Given the divergent historical and contemporary racialization of various Asian American groups, our primary aim was to disaggregate the population into meaningful ethnic subgroupings (East Asian American, Southeast Asian American, and South Asian) and to examine potential differences in the levels of COVID-19 stressful life events, direct and vicarious

racial discrimination, and mental health outcomes. We based our exploratory study of relationships between pandemic stress, anti-Asian racism, and mental health on Harrell’s (34) multidimensional conceptualization of racism-related stress (34), which integrates the literature on racism, stress processes, and mental health, as well as on Meyer’s (35) minority stress theory, which posits that societal stigma, prejudice, and discrimination create a hostile environment that leads to mental health problems. Both theories predict that the stress associated with being a minority (being subjected to direct and vicarious anti-Asian prejudice and hate) are associated with negative wellbeing, above and beyond the effects of general stress (pandemic stress).

In addition to the ethnic subgrouping, we also examined whether being Chinese and/or having been mistaken for Chinese by strangers (“Chinese street race”) may be associated with experiences with racial discrimination. A previous study of street race (i.e., one’s belief about how strangers on the street perceive your race/ethnicity) has found that Latinx who are racialized on the street as Black or Arab/Middle Eastern were more likely to have experienced racial discrimination (36). Moreover, because prior studies of Asian Americans’ mental health during the pandemic have not paid adequate attention to other critical dimensions of heterogeneity within the population that may reflect structural inequalities (37), we examined the demographic correlates of mental health outcomes separately for Asian ethnic subgroups.

Specifically, we aimed to answer the following research questions: (1) To what extent did Asian American adults report various COVID-19-related stressors (namely, pandemic stress, direct anti-Asian discrimination, vicarious anti-Asian discrimination) during the early months of the pandemic, and how did these differ by major demographic characteristics? (2) To what extent did Asian American adults report experiencing distress and worry during the early months of the pandemic, and how did these differ by major demographic characteristics? (3) Were higher levels of direct and vicarious discrimination associated with worse psychological wellbeing (i.e., distress and worry) above and beyond the effects of pandemic-related life stress? And how did these associations differ by Asian ethnic subgroup?

Methods

Survey administration

Qualtrics, a commercial survey company, was contracted to collect online survey data from their research panel of respondents who had signed up to take online surveys in exchange for incentives (e.g., cash, airline miles, gift cards). The recruitment targeted potential respondents using the following eligibility criteria: (1) identify as Asian American, (2) are 18 years

old or older, (3) able to respond to questions in English, and (4) had resided continuously in the United States between March 2020 and the date of the survey (in December 2020). Qualtrics used attention checks (i.e., embedding questions that instruct respondents to mark a specific response) and speeding checks (i.e., monitoring the duration of respondent survey engagement) as data quality checks. The final pool included responses from 689 Asian American adult respondents. Because of our research questions about broad Asian ethnic subgroups (i.e., East Asian, Southeast Asian, South Asian), we selected only those who did not indicate multi-ethnic or multi-racial heritage, which resulted in the sample of 620 for the present analyses.

Demographic characteristics

Demographic characteristics of the total sample and each ethnic subgroup are reported in Table 1. Participants were 620 Asian American adults (61.29% female) whose age ranged from 18 to 80 years ($M = 40.6$, $SD = 15.7$). Our sample consisted of 340 (54.84%) East Asian, 153 (24.68%) Southeast Asian, and 127 (20.48%) South Asian participants. The largest ethnic subgroups were Chinese ($n = 209$; 33.71%), Indian ($n = 81$; 13.06%), Filipino ($n = 70$; 11.29%), Japanese ($n = 59$; 9.52%), Korean ($n = 47$; 7.58%), and Pakistani ($n = 23$; 3.71%). Participants represented 43 states spanning diverse geographic regions including the West (40.97%), Northeast (21.94%), South (25.97%), and Midwest (11.13%). More than half (55.00%) of the sample was born outside of the United States, and the average length of U.S. residence among foreign born participants was 25.5 years ($SD = 15.0$). The majority of participants had received some college education or more (80.97%) and reported their relationship status as either single (39.90%) or married (44.43%). Our sample was predominantly heterosexual (90.95%), with the remainder identifying as gay/lesbian (3.07%), bisexual/pansexual (4.85%), and other (1.13%). In terms of political affiliation, 41.13% of participants identified as liberal, 36.45% identified as neither liberal nor conservative, and 22.42% identified as conservative. Approximately 40% of participants reported not having a religious affiliation, with the majority of the rest identifying as Protestant (18.23%), Catholic (11.61%), Buddhist (10.00%), Hindu (8.87%), and Muslim (6.29%).

Measures

Pandemic stress

Pandemic stress was measured using the Holmes and Rahe Stress Inventory (38–40). Participants were shown a list of 43 life events that could have happened that would have resulted in a change in their lives, and they were asked to indicate whether any of the events had happened since January 2020. Each event is associated with a numerical index of how challenging it is

to adapt to the changes caused by that particular event. These life events ranged from death of a spouse (100), death of a close family member (63), change in financial state (38), major change in living condition (25), to minor violations of the law such as traffic tickets (11). The scale is scored as the sum of life change units accrued during the specified period, with the theoretical range from 0 to 1,000. The Holmes and Rahe Stress Inventory has been shown to be positively correlated with other measures of stress in the general U.S. population [e.g., Global Inventory of Stress Scale; (41)] and demonstrated good test-retest reliability ($r = 0.82$) over a two-week period (42). It has also been found to be valid across different U.S. ethnic populations (African American, Mexican American, White American) as well as in some overseas populations including in Japan and Taiwan (43) and Taiwan (40). We divided the sum score by 10 to facilitate the interpretation of regression coefficients.

COVID-19 related racial discrimination

Experiences of discrimination were assessed using a modified version of the COVID-19 Related Racial Discrimination Scale (30), which assessed four types of racial discrimination experiences that may have affected Chinese Americans during the pandemic: direct in-person, direct online, vicarious in-person, and vicarious online. Following Zong et al. (44), the present study collapsed these subscales to understand direct discrimination either online or in-person and vicarious discrimination either online or in person. For each item in these scales, participants indicated the frequency at which they experienced the event since the start of the pandemic. To account for the time that has passed since spring 2020, we revised the original 6-point Likert scale ranging from 1 (never) to 6 (every day) to a 5-point Likert scale ranging from 1 (never) to 5 (very frequently, 11+ times). The summary scores were calculated as the mean value across the items for each subscale. The internal consistency (Cronbach's alpha or α hereafter) of the combined direct discrimination subscale in our sample was excellent for the overall sample ($\alpha = 0.95$) and across ethnic subgroups ($\alpha = 0.94$, 0.96, and 0.95 for East Asians, South Asians, and Southeast Asians, respectively). The vicarious discrimination subscale also has an excellent internal consistency for the overall sample ($\alpha = 0.93$) and across ethnic subgroups ($\alpha = 0.94$, 0.92, and 0.92 for East Asians, South Asians, and Southeast Asians, respectively).

Psychological distress

Psychological distress was measured using the 10-item version of the Kessler Psychological Distress Scale (K10) (45), a simple measure of non-specific psychological distress that has been used with racial/ethnic minorities including Asian

Americans (46). Research has supported a two-factor structure of this scale, including Depression and Anxiety, across various samples including Chinese adults (47). Participants responded to a series of 10 questions about how often they felt emotional states including feeling tired, hopeless, nervous, or depressed during the last 30 days, with response options including 1 (none of the time), 2 (a little of the time), 3 (some of the time), 4 (most of the time), and 5 (all of the time). Total scores, computed as the sum of scores across the 10 items, range from 10 to 50, with scores from 20 to 24 indicating a “mild mental disorder,” scores from 25 to 29 indicating a “moderate mental disorder,” and scores above 30 indicating a “severe mental disorder.” The validity of these cutoffs has been supported by their ability to discriminate between individuals with mental illness vs. those without (45, 48). The internal consistency of this subscale in our sample was excellent for the overall sample ($\alpha = 0.96$) and across ethnic subgroups ($\alpha = 0.95, 0.97$, and 0.96 for East Asians, South Asians, and Southeast Asians, respectively).

Worry

Worry was measured using the brief version of the Penn State Worry Questionnaire (49). This scale consisted of five items including “Many situations make me worry,” “I know I should not worry about things, but I just cannot help it,” and “I noticed that I have been worrying about things.” Participants were asked to indicate if those statements were typical of them, with options ranging from 1 (not at all typical of me) to 5 (very typical of me), and total scores were calculated as the sum of the five items, with a theoretical range between 5 and 25. Higher total scores indicated higher levels of worry, with a cut-off score of 15 or greater suggesting clinical level of worry (49). While the brief version of the PSWQ has yet to be validated with Asian Americans, the full 16-item version of this scale demonstrated good reliability ($\alpha = 0.81$) in a sample of Asian American college students (50–52). Furthermore, whereas the full scale consists of two subscales tapping positively worded items and negatively worded items, respectively, the brief version includes five positively worded items only, resulting in a unidimensional scale (42). In the present study, the internal consistency was excellent for the overall sample ($\alpha = 0.96$) and across ethnic subgroups ($\alpha = 0.94, 0.93$, and 0.94 for East Asians, South Asians, and Southeast Asians, respectively).

Street race

To assess the likelihood that each participant believes they may be racially or ethnically misidentified, we modified a measure developed by López et al. (36) for Latinx Americans to assess “street race,” a perception of how other Americans on the street would perceive

one’s race (36). Participants were asked if they have ever been mistaken for a race/ethnicity other than their own and asked to indicate the top three racial or ethnic groups other than their own that they are frequently mistaken for. The response to the second question was manually coded for whether the participant reported being mistaken as Chinese or not. Chinese-identifying participants and non-Chinese participants who reported being mistaken as Chinese were coded as 1 (i.e., “Chinese or mistaken as Chinese”), and non-Chinese participants who reported never being mistaken as Chinese were coded as 0 (i.e., “neither Chinese nor mistaken as Chinese”)¹.

Demographic information

Demographic covariates previously identified as significant predictors of discrimination, distress, and worry were included in our study. Age, gender (i.e., male, female), ethnicity, country of birth, years of residence in the United States, education level, and health insurance status were included. For the purposes of this study, we coded ethnicity into a categorical variable including three categories (1 = East Asian, 2 = South Asian, 3 = Southeast Asian). We created a binary variable of participants’ nativity (1 = U.S. born, 0 = foreign born) using their country of birth. To control for socioeconomic status, we further coded participants’ education level (i.e., less than college, some college or more) and health insurance status (i.e., uninsured, public insurance, private insurance).

Analytic strategy

STATA v 17 was used for all analyses. As a preliminary step, we conducted one-way analysis of variance (ANOVA), chi-square tests to compare demographic characteristics across the ethnic subgroups (i.e., East Asian, South Asian, Southeast Asian). Then, we conducted *t*-tests and one-way ANOVAs to compare the means of COVID-19 stressors (i.e., pandemic stress, direct discrimination, vicarious discrimination) and psychological outcomes (i.e., distress, worry) by major categorical demographic characteristics (i.e., ethnic subgroup, street race, gender,

1 Because the study was concerned with Sinophobia and anti-Chinese racism as potentially more harmful than general anti-Asian racism, we grouped all who identified as Chinese regardless of their street race. *T*-tests comparing the K10 scores and PSWQ scores between those Chinese origin and not mistaken as non-Chinese ($n = 137$) vs. participants of Chinese origin and mistaken as non-Chinese ($n = 56$) revealed that the two did not differ significantly on measures of psychological distress or worry $t(191) = 0.82$, $t(191) = 0.87$, respectively.

TABLE 1 Sample characteristics by ethnic subgroup.

	Total (<i>n</i> = 620)	East Asian (<i>n</i> = 340)	South Asian (<i>n</i> = 127)	Southeast Asian (<i>n</i> = 153)	χ^2/F
Variables	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Age, <i>M</i> (<i>SD</i>)	40.63 (15.70)	44.23 (16.04)	36.78 (15.71)	35.83 (12.69)	$F = 21.18^{***}$
Gender					
Male	240 (38.71)	141 (41.47)	47 (37.01)	52 (33.99)	$\chi^2 = 2.69$
Female	380 (61.29)	199 (58.53)	80 (62.99)	101 (66.01)	
Nativity					
U.S. born	279 (45.00)	134 (39.41)	69 (54.33)	76 (49.67)	$\chi^2 = 10.11^{**}$
Foreign born	341 (55.00)	206 (60.59)	58 (45.67)	77 (50.33)	
Education					
Less than college	118 (19.03)	56 (16.47)	25 (19.69)	37 (24.18)	$\chi^2 = 4.12$
Some college or more	502 (80.97)	284 (83.53)	102 (80.31)	116 (75.82)	
Health insurance					
Uninsured	57 (9.56)	22 (6.67)	16 (13.33)	19 (13.01)	$\chi^2 = 7.25$
Public insurance	137 (22.99)	77 (23.33)	27 (22.50)	33 (22.6)	
Private insurance	402 (67.45)	231 (70)	77 (64.17)	94 (64.38)	
Geographic region					
Northeast	137 (21.92)	79 (23.10)	45 (35.16)	13 (8.39)	$\chi^2 = 73.37^{***}$
West	255 (40.8)	166 (48.54)	17 (13.28)	72 (46.45)	
South	164 (26.24)	63 (18.42)	52 (40.63)	49 (31.61)	
Midwest	69 (11.04)	34 (9.94)	14 (10.94)	21 (13.55)	
Street race					
Chinese or mistaken as Chinese	366 (58.56)	290 (84.8)	4 (3.13)	72 (46.45)	$\chi^2 = 268.22^{***}$
Neither Chinese nor mistaken as Chinese	259 (41.44)	52 (15.2)	124 (96.88)	83 (53.55)	

** $p < 0.01$, *** $p < 0.001$.

nativity, education level, health insurance status). In order to assess the normality of data distribution, we examined its skewness and kurtosis and all the continuous except for pandemic stress were within ± 3 and kurtosis within ± 10 (53). For continuous variables (i.e., age), we examined their correlation with each of the study variables. We used Bonferroni *post-hoc* tests following significant ANOVAs for pairwise comparisons.

Finally, we conducted hierarchical regression analyses to examine whether experiences of discrimination were associated with negative psychological outcomes over and above the effects of pandemic stress. For each outcome, we entered demographic covariates (i.e., gender, age, nativity, education level, street race, health insurance status) in the first step (Model 1), pandemic stress in the second step (Model 2), and discrimination (i.e., direct, vicarious) in the final step (Model 3). To examine whether these relations vary by ethnicity, analyses were conducted separately

for each ethnic subgroup (i.e., East Asian, South Asian, Southeast Asian).

Results

Demographic comparisons

Comparisons of demographic characteristics by ethnic subgroups are presented in Table 1. East Asian participants ($M = 44.2$, $SD = 16.0$) were significantly older than South Asian ($M = 36.8$, $SD = 15.7$) and Southeast Asian ($M = 35.8$, $SD = 12.7$) participants ($F = 21.18$, $p < 0.001$). We also found significant ethnic subgroup differences in nativity ($\chi^2 = 10.15$, $p < 0.01$), with more than half of East Asian participants (60.59%, $n = 206$) being foreign born and more than half of South Asian participants (54.33%, $n = 69$) being U.S. born. Nearly half of East Asian (48.85%, $n = 166$) and Southeast Asian

TABLE 2 Comparisons of study variables by demographic characteristics.

	Pandemic stress		Direct discrimination		Vicarious discrimination		Distress		Worry	
	M (SD)	t/F	M (SD)	t/F	M (SD)	t/F	M (SD)	t/F	M (SD)	t/F
Ethnic group										
East Asian	8.8 (8.8)		1.5 (0.7)		2.0 (1.1)		20.2 (9.2)		14.7 (5.7)	
South Asian	8.7 (7.5)	2.87 [†]	1.8 (1.0)	5.68**	2.1 (1.1)	1.01	24.4 (11.9)	12.62***	15.3 (6.1)	2.55 [†]
Southeast Asian	10.7 (9.5)		1.7 (0.9)		2.2 (1.0)		23.9 (10.8)		16.0 (6.3)	
Gender										
Man	8.4 (7.2)	−1.96*	1.6 (0.8)	−0.10	2.0 (1.0)	−1.82*	20.4 (9.6)	−2.89*	13.8 (5.6)	−4.33***
Woman	9.8 (9.6)		1.6 (0.9)	−0.10	2.1 (1.1)		22.8 (10.7)		15.9 (6.0)	
Nativity										
U.S. born	10.0 (9.9)	−2.04*	1.7 (0.9)	−1.46	2.2 (1.1)	−3.03**	23.0 (10.6)	−2.85**	15.8 (6.0)	−2.73**
Foreign born	8.4 (7.2)		1.6 (0.8)		1.9 (1.0)		20.6 (10.0)		14.4 (5.8)	
Education										
Less than college	9.5 (8.5)	−0.32	1.7 (0.9)	−0.60	2.2 (1.1)	−1.73	24.8 (11.2)	−3.70***	16.3 (6.1)	−2.22*
Some college or more	9.2 (8.9)		1.6 (0.8)		2.0 (1.1)		21.2 (10.0)		14.8 (5.9)	
Health insurance status										
Uninsured	12.1 (9.8)	4.68**	2.0 (1.1)	5.51**	2.3 (1.2)	3.24*	27.2 (10.9)	8.81**	16.4 (6.3)	1.44
Public insurance	7.7 (6.9)		1.5 (0.8)		1.8 (0.9)		21.0 (10.0)		15.5 (6.2)	
Private insurance	9.3 (9.2)		1.6 (0.8)		2.1 (1.1)		21.4 (10.3)		14.8 (5.8)	
Street race										
Chinese or mistaken as Chinese	8.9 (8.7)	1.23	1.6 (0.8)	1.87 [†]	2.1 (1.0)	−0.81	20.8 (9.5)	3.38**	14.9 (5.9)	1.03
Not Chinese and not mistaken as Chinese	9.8 (8.8)		1.7 (1.0)		2.0 (1.1)		23.6 (11.3)		15.4 (6.1)	

[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Tests of group differences for ethnic groups and health insurance statuses show the F statistics. Tests of group differences for gender, nativity, and street race used the t statistics.

(46.45%, $n = 72$) participants were residing in the Western U.S., whereas the largest geographic region represented by South Asian participants was the South (40.63%, $n = 52$; $\chi^2 = 74.41$, $p < 0.001$). The three groups did not differ significantly in their gender distribution, education level, and health insurance status; however, Southeast Asians had the highest proportion of participants with less than college education (24.18%), and East Asians had the highest proportion of those who had received some college education or more (83.53%). Whereas, the majority (84.80%; $n = 259$) of East Asian Americans either identified as Chinese or reported being mistaken as Chinese, and the majority (96.88%; $n = 124$) of South Asian Americans did not identify as Chinese or did not report being mistaken as Chinese, Southeast Asian Americans were more evenly split, with 53.55% ($n = 83$) reporting that they either identified as or had been mistaken as Chinese ($\chi^2 = 226.06$, $p < 0.001$).

Comparisons of study variables by major demographic characteristics are presented in Table 2. Ethnic subgroup

differences in levels of pandemic stress were marginally significant ($p = 0.057$), with Southeast Asians reporting higher levels than East Asians ($p = 0.07$). The three ethnic subgroups varied significantly in their reported levels of direct discrimination ($p < 0.01$), but not vicarious discrimination ($p = 0.37$). *Post-hoc* analyses revealed that East Asian participants reported lower levels of direct discrimination than South Asian ($p < 0.01$) and Southeast Asian ($p = 0.04$) participants. East Asian participants also reported significantly lower levels of psychological distress than South Asian ($p < 0.001$) and Southeast Asian ($p < 0.01$) participants. Ethnic subgroup differences in levels of worry were marginally significant ($p = 0.08$), with Southeast Asians reporting higher levels than East Asians ($p = 0.08$). Furthermore, participants who identified as Chinese or were mistaken as Chinese reported significantly higher levels of distress (but not worry) than those who did not meet either criterion ($p < 0.01$).

TABLE 3 Correlations among study variables.

Variables	<i>M (SD)</i>	1	2	3	4	5	6
1. Age	40.63 (15.70)	-					
2. Pandemic stress	9.24 (8.79)	-0.19	-				
3. Direct discrimination	1.63 (0.85)	-0.30	0.24	-			
4. Vicarious discrimination	2.06 (1.06)	-0.42	0.35	0.74	-		
5. Distress	21.86 (10.33)	-0.46	0.30	0.54	0.51	-	
6. Worry	15.10 (5.95)	-0.37	0.23	0.35	0.41	0.69	-

M, Mean; *SD*, Standard Deviation. All correlations are significant at $p < 0.001$.

Women in our sample reported significantly higher levels of pandemic stress ($p = 0.05$), distress ($p < 0.01$), worry ($p < 0.001$), and vicarious discrimination ($p = 0.03$) than men, but no gender differences were found in experiences of direct discrimination ($p = 0.59$). U.S. born participants reported significantly higher levels of pandemic stress ($p = 0.03$), vicarious discrimination ($p < 0.01$), distress ($p < 0.01$), and worry ($p < 0.01$) than foreign born participants. We found no significant differences in levels of direct discrimination by nativity.

Participants who had received some college education or more were at significantly higher risk for distress ($p < 0.001$) and worry ($p = 0.02$) than those with less than college education, but the two groups did not differ in their pandemic stress ($p = 0.75$), direct discrimination ($p = 0.55$), and vicarious discrimination ($p = 0.08$). In general, uninsured participants were at the highest risk for pandemic stress, direct discrimination, vicarious discrimination, and distress compared to those with public and private insurance. Not included in Table 2, we found no significant differences in any of the study variables by geographic region.

Zero-order correlations revealed that age was negatively correlated with all study variables, including pandemic stress ($r = -0.19$, $p < 0.001$), direct discrimination ($r = -0.30$, $p < 0.001$), vicarious discrimination ($r = -0.42$, $p < 0.001$), distress ($r = -0.45$, $p < 0.001$), and worry ($r = -0.37$, $p < 0.001$) (see Table 3).

In sum, these results indicate that participants who are women, younger, born in the United States, and uninsured report higher levels of various COVID-19 stressors and negative psychological outcomes compared to those who are men, older, born outside of the United States, and have either private or public insurance. Our results also suggest that South Asian and Southeast Asian participants generally report higher levels of discrimination and negative psychological outcomes than East Asian participants, with ethnic subgroup differences being most pronounced in experiences of direct discrimination and distress.

Hierarchical regressions

Prior to running the hierarchical regressions, we examined zero-order correlations among study variables (see Table 3). We found significant correlations among all study variables at the $p < 0.001$ significance level. Pandemic stress was moderately correlated with discrimination and psychological outcomes, with all coefficients falling below 0.40. Direct and vicarious discrimination showed moderate to strong correlations with negative psychological outcomes ($r = 0.41$ – 0.54) and strong correlations with one another ($r = 0.74$). Psychological distress and worry were also strongly correlated with each other ($r = 0.69$). While a correlation r greater 0.80 indicates the presence of multicollinearity (54), we examined the variance inflation factor (VIF) values for our regression models including all predictors for further investigation. All VIF values were estimated to be <3 .

Hierarchical ordinary least squares (OLS) regression analyses were conducted for each ethnic subgroup to examine the unique contributions of pandemic stress and discrimination after controlling for demographic covariates (see Tables 4–9). We assessed whether the ethnic subgroups varied in the predictors of psychological outcomes by comparing the confidence intervals of the standardized coefficients (β). If the 95% confidence intervals for a particular predictor did not overlap across groups, we concluded that there was a meaningful difference. We also note ethnic subgroup differences in the statistical significance of predictors (i.e., when a predictor significantly predicted outcomes in one subgroup but not in another).

Regarding demographic variables, younger age was significantly associated with increases in distress and worry across all three groups and all three steps, including the final model accounting for pandemic stress and discrimination (Model 3). Being female was a stronger predictor of distress in Southeast Asians than East Asians. Whereas gender showed nearly null associations with psychological distress among East Asians across all three steps ($b = -0.025$, $p = 0.98$ in Model 3), being female was significantly related to distress ($b = 4.83$, $p < 0.01$) over and above the contributions of pandemic stress and discrimination among Southeast Asians. It is also worth noting

TABLE 4 Hierarchical regressions for psychological distress: East Asian.

	Model 1		Model 2		Model 3	
	Coef. (SE)	95% CI	Coef. (SE)	95% CI	Coef. (SE)	95% CI
Woman (ref: man)	0.27 (0.95)	[−1.6, 2.13]	−0.16 (0.93)	[−2, 1.68]	−0.03 (0.84)	[−1.67, 1.62]
Age	−0.24 (0.03)***	[−0.3, −0.18]	−0.23 (0.03)***	[−0.29, −0.17]	−0.15 (0.03)***	[−0.21, −0.09]
Less than college (Ref: college and more)	−0.06 (1.29)	[−2.6, 2.47]	0.16 (1.26)	[−2.33, 2.64]	0.4 (1.13)	[−1.83, 2.63]
US Born (Ref: foreign Born)	1.43 (0.96)	[−0.46, 3.32]	1.26 (0.94)	[−0.59, 3.11]	1 (0.84)	[−0.65, 2.66]
Chinese or mistaken as Chinese (Ref: not Chinese and not mistaken)	−0.02 (0.95)	[−1.88, 1.85]	0.01 (0.93)	[−1.82, 1.84]	0.2 (0.84)	[−1.45, 1.84]
Health insurance status (ref: private insurance)						
Uninsured	3.75 (1.91) [†]	[−0.01, 7.51]	3.63 (1.87) ^z	[−0.06, 7.31]	3.23 (1.67) [†]	[−0.06, 6.52]
Public insurance	0.28 (1.17)	[−2.02, 2.58]	0.17 (1.15)	[−2.08, 2.43]	0.34 (1.03)	[−1.68, 2.36]
Pandemic stress			0.2 (0.05)***	[0.1, 0.31]	0.11 (0.05)*	[0.01, 0.2]
Direct discrimination					5.34 (0.81)***	[3.75, 6.93]
Vicarious discrimination					0.19 (0.59)	[−0.97, 1.36]
R ²	0.20		0.23		0.39	
ΔR ²			0.04***		0.16***	

[†] $p < 0.1$, * $p < 0.05$, *** $p < 0.001$. Coef, Coefficient; SE, Standard Error; CI, Confidence Intervals.

that although female gender was not significantly associated with distress among South Asians, it was a significant predictor of worry across all three steps ($b = 2.03$, $p = 0.04$).

In general, health insurance status was a more robust predictor of negative psychological outcomes for South Asian and Southeast Asian participants than for East Asian participants. Although the confidence intervals overlapped across ethnic subgroups, having public insurance (as opposed to private insurance) was significantly related to higher distress among South Asian and Southeast Asian participants ($b = 4.65$, $p = 0.02$ for South Asians, $b = 5.00$, $p < 0.01$ for Southeast Asians, Model 3), whereas insurance status did not predict distress among East Asians ($b = 0.34$, $p = 0.74$). Being uninsured was also generally associated with worse outcomes across ethnic subgroups, but none of these associations were significant in any of the final models. Nativity, education level, and Chinese street race (i.e., whether one identifies, or reports being mistaken as Chinese) were not significantly related with distress and worry for any of the ethnic subgroups. For South Asians, the sample size for those reporting being mistaken for Chinese was very small ($n = 4$), thus this variable was omitted from the regression models.

Pandemic stress was entered in the second step (Model 2), and the change in R^2 was significant across ethnic subgroups for both psychological outcomes. Direct and vicarious discrimination were simultaneously entered in the third step (Model 3), and the R^2 was significant across ethnic subgroups for both outcomes. After accounting for

discrimination, the coefficient for pandemic stress decreased slightly but remained statistically significant in predicting distress for all three ethnic subgroups and in predicting worry among South Asians and East Asians. Thus, pandemic stress significantly contributed to worse psychological outcomes in our sample after controlling for demographic variables, and in turn, experiences of direct and vicarious discrimination significantly contributed to these outcomes over and above the effects of demographic variables and pandemic stress.

In the final model (Model 3), we found several notable ethnic subgroup differences regarding the contributions of pandemic stress, direct discrimination, and vicarious discrimination. Pandemic stress was a significant predictor of distress across ethnic subgroups and of worry among South Asians and East Asians, with South Asians showing the largest coefficients for both outcomes ($b = 0.35$, $p < 0.01$ for distress; $b = 0.15$, $p = 0.04$ for worry). On the other hand, neither direct nor vicarious discrimination significantly predicted distress or worry among South Asians, except for the marginally significant association between direct discrimination and distress ($b = 2.71$, $p = 0.06$).

Experiences of direct discrimination were significantly and positively associated with both distress ($b = 5.34$, $p < 0.001$) and worry ($b = 1.27$, $p = 0.02$) among East Asians, whereas it significantly predicted distress ($b = 4.11$, $p < 0.001$) but not worry ($b = 0.40$, $p = 0.61$) among Southeast Asians. Thus, despite reporting lower levels of both direct discrimination and negative psychological outcomes than South Asians and Southeast Asians, East Asian

TABLE 5 Hierarchical regressions for psychological distress: South Asian.

	Model 1		Model 2		Model 3	
	Coef. (SE)	95% CI	Coef. (SE)	95% CI	Coef. (SE)	95% CI
Woman (ref: man)	2.46 (2.01)	[−1.52, 6.43]	2.16 (1.88)	[−1.56, 5.87]	2.00 (1.67)	[−1.31, 5.31]
Age	−0.33 (0.07)***	[−0.46, −0.19]	−0.28 (0.07)***	[−0.41, −0.15]	−0.19 (0.06)**	[−0.31, −0.07]
Less than college (ref: college and more)	−2.13 (2.59)	[−7.25, 3]	−3.66 (2.44)	[−8.5, 1.18]	−2.66 (2.18)	[−6.97, 1.66]
US Born (ref: foreign born)	2.33 (2.07)	[−1.78, 6.44]	2.50 (1.94)	[−1.34, 6.33]	1.05 (1.76)	[−2.43, 4.53]
Health insurance status (ref: private insurance)						
Uninsured	5.55 (2.94) [†]	[−0.28, 11.38]	5.82 (2.75)*	[0.37, 11.27]	4.60 (2.47) [†]	[−0.29, 9.49]
Public insurance	3.41 (2.38)	[−1.31, 8.12]	5.00 (2.26)*	[0.53, 9.47]	4.65 (2)*	[0.68, 8.62]
Pandemic stress			0.52 (0.12)***	[0.27, 0.77]	0.35 (0.12)**	[0.11, 0.6]
Direct discrimination					2.71 (1.4) [†]	[−0.06, 5.49]
Vicarious discrimination					2.43 (1.5)	[−0.55, 5.4]
R ²	0.21		0.27		0.34	
ΔR ²			0.06***		0.07***	

[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Coef, Coefficient; SE, Standard Error; CI, Confidence Intervals.

TABLE 6 Hierarchical regressions for psychological distress: Southeast Asian.

	Model 1		Model 2		Model 3	
	Coef. (SE)	95% CI	Coef. (SE)	95% CI	Coef. (SE)	95% CI
Woman (ref: man)	4.32 (1.64)**	[1.07, 7.56]	4.32 (1.56)**	[1.23, 7.42]	4.83 (1.4)**	[2.07, 7.6]
Age	−0.36 (0.07)***	[−0.5, −0.23]	−0.32 (0.07)***	[−0.45, −0.19]	−0.25 (0.06)***	[−0.37, −0.13]
Less than college (ref: college and more)	1.75 (1.91)	[−2.03, 5.54]	2.5 (1.83)	[−1.13, 6.13]	2.89 (1.64) [†]	[−0.35, 6.14]
US born (ref: foreign born)	−0.48 (1.65)	[−3.75, 2.79]	−1.19 (1.59)	[−4.33, 1.94]	−0.08 (1.42)	[−2.89, 2.74]
Chinese or mistaken as Chinese (Ref: not Chinese and not mistaken)	0.85 (4.74)	[−8.52, 10.22]	0.68 (4.52)	[−8.25, 9.61]	1.42 (4.03)	[−6.55, 9.39]
Health insurance status (ref: private insurance)						
Uninsured	5.48 (2.35)*	[0.83, 10.14]	3.58 (2.3)	[−0.96, 8.12]	2.61 (2.08)	[−1.51, 6.72]
Public insurance	4.89 (1.93)*	[1.08, 8.7]	5.46 (1.84)**	[1.82, 9.11]	4.95 (1.64)**	[1.71, 8.2]
Pandemic stress			0.31 (0.08)***	[0.15, 0.47]	0.2 (0.08)*	[0.05, 0.35]
Direct discrimination					4.11 (1.12)***	[1.89, 6.33]
Vicarious discrimination					0.71 (1.08)	[−1.42, 2.83]
R ²	0.23		0.24		0.31	
ΔR ²			0.02***		0.07***	

[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Coef, Coefficient; SE, Standard Error; CI, Confidence Intervals.

participants demonstrated the strongest associations between these variables.

Vicarious discrimination was a poor predictor of distress across all three groups, but it was significantly related with increases in worry Southeast Asian ($b = 1.57$, $p = 0.04$) participants, though not among East

Asian ($b = 0.80$, $p = 0.06$) and South Asian participants ($b = 0.81$, $p = 0.35$). As mentioned above, whereas direct (but not vicarious) discrimination significantly contributed to distress among Southeast Asians, vicarious (but not direct) discrimination significantly contributed to their worry.

TABLE 7 Hierarchical regressions for psychological worry: East Asian.

	Model 1		Model 2		Model 3	
	Coef. (SE)	95% CI	Coef. (SE)	95% CI	Coef. (SE)	95% CI
Woman (ref: man)	1.22 (0.6)*	[0.04, 2.39]	0.98 (0.59)†	[−0.19, 2.15]	0.97 (0.57)†	[−0.15, 2.1]
Age	−0.14 (0.02)***	[−0.18, −0.1]	−0.13 (0.02)***	[−0.17, −0.1]	−0.1 (0.02)***	[−0.14, −0.06]
Less than college (ref: college and more)	−0.18 (0.81)	[−1.78, 1.42]	−0.06 (0.8)	[−1.64, 1.52]	−0.07 (0.78)	[−1.6, 1.45]
US born (ref: foreign born)	1 (0.61)	[−0.2, 2.19]	0.9 (0.6)	[−0.27, 2.08]	0.79 (0.58)	[−0.34, 1.93]
Chinese or mistaken as Chinese (Ref: not Chinese and not mistaken)	0.05 (0.6)	[−1.13, 1.23]	0.07 (0.59)	[−1.1, 1.23]	0.02 (0.57)	[−1.1, 1.15]
Health insurance status (ref: private insurance)						
Uninsured	1.12 (1.21)	[−1.26, 3.49]	1.05 (1.19)	[−1.29, 3.39]	0.98 (1.15)	[−1.27, 3.24]
Public insurance	1.54 (0.74)*	[0.08, 2.99]	1.48 (0.73)*	[0.04, 2.91]	1.5 (0.7)*	[0.12, 2.88]
Pandemic stress			0.11 (0.03)**	[0.05, 0.18]	0.07 (0.03)*	[0, 0.13]
Direct discrimination					1.27 (0.55)*	[0.18, 2.36]
Vicarious discrimination					0.8 (0.4)†	[0, 1.59]
R2	0.20		0.23		0.39	
ΔR2			0.04***		0.16***	

† p < 0.1, *p < 0.05, **p < 0.01, ***p < 0.001. Coef, Coefficient; SE, Standard Error; CI, Confidence Intervals.

TABLE 8 Hierarchical regressions for psychological worry: South Asian.

	Model 1		Model 2		Model 3	
	Coef. (SE)	95% CI	Coef. (SE)	95% CI	Coef. (SE)	95% CI
Woman (ref: man)	2.2 (1.04)*	[0.13, 4.26]	2.08 (1.01)*	[0.08, 4.07]	2.03 (0.97)*	[0.1, 3.95]
Age	−0.13 (0.04)***	[−0.2, −0.06]	−0.11 (0.04)**	[−0.18, −0.04]	−0.08 (0.04)*	[−0.15, −0.01]
Less than college (ref: college and more)	−0.26 (1.35)	[−2.92, 2.41]	−0.86 (1.31)	[−3.46, 1.74]	−0.51 (1.27)	[−3.02, 2]
US born (ref: foreign born)	1 (1.08)	[−1.14, 3.14]	1.06 (1.04)	[−1, 3.13]	0.57 (1.02)	[−1.46, 2.59]
Health insurance status (ref: private insurance)						
Uninsured	2.28 (1.53)	[−0.75, 5.31]	2.39 (1.48)	[−0.54, 5.31]	1.95 (1.44)	[−0.89, 4.8]
Public insurance	2.63 (1.24)*	[0.17, 5.08]	3.26 (1.21)**	[0.85, 5.66]	3.14 (1.16)**	[0.83, 5.44]
Pandemic stress			0.21 (0.07)**	[0.07, 0.34]	0.15 (0.07)*	[0.01, 0.29]
Direct discrimination					0.98 (0.82)	[−0.64, 2.59]
Vicarious discrimination					0.81 (0.87)	[−0.92, 2.54]
R2	0.25		0.35		0.50	
ΔR2			0.10***		0.15***	

*p < 0.05, **p < 0.01, ***p < 0.001. Coef, Coefficient; SE, Standard Error; CI, Confidence Intervals.

Discussion

Primary findings

Despite political references blaming China (and those associated with China) for the spread of the COVID-19 virus that developed into a worldwide pandemic, much of the public

discourse in the U.S. about COVID-19-related discrimination and hate have referred to the targeted group at the aggregated racial level (e.g., anti-Asian hate) and sometimes even extending to Pacific Islanders (e.g., “#StopAAPIHate”). Consequently, a significant portion of social science research on the mental health impact of COVID-19 has also been conducted at the racial group level without further disaggregation, which has

TABLE 9 Hierarchical regressions for psychological worry: Southeast Asian.

	Model 1		Model 2		Model 3	
	Coef. (SE)	95% CI	Coef. (SE)	95% CI	Coef. (SE)	95% CI
Woman (ref: man)	2.00 (1.03) [†]	[−0.05, 4.04]	2 (1.03) [†]	[−0.03, 4.03]	2.06 (0.99)*	[0.1, 4.03]
Age	−0.22 (0.04)***	[−0.3, −0.13]	−0.21 (0.04)***	[−0.29, −0.12]	−0.16 (0.04)**	[−0.25, −0.07]
Less than college (ref: college and more)	−0.15 (1.21)	[−2.53, 2.24]	0.06 (1.21)	[−2.32, 2.45]	0.4 (1.17)	[−1.9, 2.71]
US born (ref: foreign born)	−0.64 (1.04)	[−2.7, 1.42]	−0.84 (1.04)	[−2.9, 1.22]	−0.51 (1.01)	[−2.51, 1.49]
Chinese or mistaken as Chinese (Ref: not Chinese and not mistaken)	2.12 (2.99)	[−3.78, 8.02]	2.08 (2.97)	[−3.79, 7.94]	2.01 (2.86)	[−3.65, 7.67]
Health insurance status (ref: private insurance)						
Uninsured	0.01 (1.48)	[−2.92, 2.94]	−0.53 (1.51)	[−3.51, 2.46]	−0.45 (1.48)	[−3.37, 2.47]
Public insurance	2.62 (1.21)*	[0.23, 5.02]	2.79 (1.21)*	[0.4, 5.18]	2.65 (1.17)*	[0.35, 4.96]
Pandemic stress			0.09 (0.05) [†]	[−0.02, 0.19]	0.02 (0.05)	[−0.08, 0.13]
Direct discrimination					0.4 (0.8)	[−1.17, 1.98]
Vicarious discrimination					1.57 (0.76)*	[0.06, 3.08]
R2	0.31		0.38		0.52	
ΔR2			0.07***		0.14***	

[†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Coef, Coefficient; SE, Standard Error; CI, Confidence Intervals.

the potential to gloss over important differences across Asian ethnic subgroups with respect to sociodemographic factors as well as their racialization. By disaggregating Asian Americans by ethnic subgroup as well as socioeconomic class, gender, nativity, geographic regions, and age, the current study highlights the vastly different experiences and impacts of COVID-19 within the Asian American population.

Descriptive analyses with the total sample found that survey respondents who are women, younger, and U.S. born reported greater stress due to life events during COVID-19, greater vicarious discrimination, greater psychological distress, and more worry compared to those who are men, older, and foreign-born. These findings are largely consistent with the literature. For example, the finding that Asian American women experience greater pandemic stress, distress, and worry than men in our study is consistent with women being at higher risk for mental health during the pandemic in the general population (55). Comparing K-10 distress scores and the Penn State Worry Scale scores of our sample against published norms indicate that people with mean scores similar to our sample had a moderate to high likelihood (48.5–69.4%) of meeting the DSM-IV criteria for any mental disorder in the past 12 months (48, 56), although the mean level of worry reported by our sample was at the subclinical level (57, 58). Although non-diagnostic, the level of distress expressed by Asian Americans in this study adds to the growing evidence of the mental health burden in context of the COVID-19 pandemic.

With respect to racial discrimination, a pre-COVID study with Asian American college students had found inconsistent

patterns of differences with respect to gender and nativity status on indices of subtle and blatant racism (59). With regard to age, we speculate that during the pandemic, younger Asian Americans may have been more connected than older Asian Americans to social media and other online platforms, which may have contributed to their increased awareness of reports of anti-Asian racial sentiments and hate incidents. It is also possible that the U.S. born Asian Americans were more likely to have been racialized (e.g., through U.S. schools, media, and neighborhoods) as visible minorities and thus more attuned to various forms of anti-Asian discrimination (60).

There were also some notable ethnic subgroup differences. Our analysis suggested that South and Southeast Asian Americans reported higher levels of psychological distress than did East Asian Americans, a pattern that was consistent with some but not all previous studies. For example, in an analysis of survey data collected from Chinese American and South Asian American residents of Chicago (29), South Asian Americans reported significantly more depressive symptoms than did Chinese Americans during COVID-19. Another study of Asian Canadians had also found that mental health symptoms increased more among South Asian Canadians (along with Black and Muslim Canadians) compared to East Asian, Southeast Asian, and White Canadians (61). Huynh et al. (26) had also reported that Southeast Asian Americans and East Asian American adults whose ethnicity were not Chinese reported more anxiety and depression during COVID-19 than those who identified as Chinese (26).

On its face, these results from these ethnic subgroup comparisons seem counter intuitive. With politicians and pundits blaming the Chinese for the pandemic, why did South Asians in the U.S. and Canada report *more* racial discrimination and psychological distress during COVID-19 than their East Asian and Chinese counterparts? One possibility, as suggested by Lozano et al. (21), is that Chinese Americans tend to live in more ethnically concentrated neighborhoods where they may be more protected from racial discrimination and distress. It is also possible that relatively recent experiences with post-9/11 xenophobia and racism may have primed South Asians to report more racial discrimination and distress (15, 19). Moreover, there is some data to suggest that Asian ethnic groups experienced a differential disease burden of COVID-19, especially during the initial months of the pandemic (23). Further research is needed to better understand how the particular racialized experiences as well as COVID-19 disease burden of each Asian ethnic community within the U.S. shape their perceptions of, and responses to, COVID-19 anti-Asian racism.

A novel aspect of our study was that in addition to Asian ethnicity, we also assessed street race to examine to what extent being Chinese or being mistaken as Chinese might be associated with discrimination and distress. However, our analyses revealed that Chinese street race was not significantly associated with direct or vicarious discrimination. In fact, Asian Americans who were neither Chinese nor had been mistaken as Chinese reported *more* psychological distress than those who were Chinese themselves. When this variable was entered into regression analyses along with other demographic predictors, Chinese street race was not a significant predictor of psychological distress or worry for any ethnic subgroups, including for Southeast Asian Americans, about half of whom had been mistaken as Chinese. Thus, at least in this sample, the prospect of being targeted by Sinophobic discrimination (1) did not explain variability in mental health outcomes. It is possible that by the time of our data collection in December 2020, in context of a widespread reference to #StopAAPIHate and the racial animus characterized as anti-Asian rather than specifically anti-Chinese (2, 3), any potential impact of being Chinese or being mistaken as Chinese was overwhelmed by the lived experiences of direct or vicarious attacks against Asians.

Our results also highlight some notable differences in the factors associated with poorer mental health across three major Asian American ethnic subgroups. For example, although East Asian Americans had reported less discrimination and distress in the group comparisons, regression analyses revealed that East Asian Americans who were younger, had experienced greater pandemic life stress, and were directly targeted by anti-Asian racism were the most distressed within this group. Southeast Asian Americans' levels of distress were also associated with younger age, stressful life events, and direct discrimination, but being female and being on public health insurance conferred additional risk in this group. In contrast, among South Asian

Americans, neither direct nor vicarious discrimination were significantly associated with their distress; only younger age, health insurance status (i.e., public insurance), and stressful life events was associated with risk for greater psychological distress. The patterns of predictors of worry for ethnic subgroups largely resemble those for psychological distress, notably with the finding that neither direct nor vicarious discrimination were significant risk factors for South Asian Americans' worry. There may not be a simple explanation for these differential patterns of psychological distress for the ethnic subgroups, as they likely reflect population characteristics uniquely shaped by different immigration and racialization history. Nevertheless, these findings reinforce the critical importance of disaggregating COVID-19 data on Asian Americans.

Separate regression analyses for each ethnic subgroup revealed some common predictors. Across all three ethnic subgroups, age remained a significant predictor for both psychological distress and worry for all three ethnic subgroups, even when the effects of other demographic factors and stressors were taken into account. This finding that younger Asian American adults reported more mental health problems than older Asian American adults during the first year of COVID-19 pandemic adds to the cumulative evidence of a widespread mental health crisis among young adults (56, 57).

Limitations and conclusion

The present findings must be interpreted with caution due to several limitations. First, the current study's data represent a convenience sample collected through a commercial online survey company and administered only in the English language. Thus, our findings may not necessarily reflect the general Asian American population. For example, in 2019, 72% of all Asians residing in the U.S. were proficient in English, whereas only 57% of foreign-born Asians were English proficient (58). Thus, the current study's participants likely reflect a more acculturated sample who could access online English-language surveys, which may reflect a more technologically savvy, college-educated sample with higher socioeconomic status than Asian American population at large. Our sampling criteria was purposefully inclusive, and the geographic distribution as well as the largest ethnic groups in this sample roughly mirror the proportion of various Asian ethnic groups in the U.S. population and regions. However, by including any adult who identified as Asian American, some of the ethnic groups (e.g., Pakistani Americans) were too small to be able to carry out ethnic-specific analyses. We were able to disaggregate the data by broad ethnic subgroups (East Asian, Southeast Asian, and South Asian) to reveal notable differences, but we must be mindful that critical points of heterogeneity within each subgroup are nevertheless elided. For example, the largest three ethnic groups in our study (Chinese, Filipino, and Indian) constituted a sizable proportion

of each subethnic group (Chinese were 61% of the East Asian sample, Filipinos were 45% of the Southeast Asian sample, and Indians were 63% of the South Asian sample), and results must be interpreted with this caveat in mind. Our study also did not sample Pacific Islanders who are often grouped together with Asian Americans but have vastly different historical and contemporary experiences. Furthermore, our study is based on cross-sectional data collected in December 2020, which reflects a particular point in the COVID-19 pandemic in the United States (~9 months into the pandemic, before vaccines became widely available, and prior to the precipitous spike in violent assaults against Asian American women and elders in 2021). Prior data from the #StopAAPIHate online reporting portal indicate that the number of COVID-19 related anti-Asian racial discrimination and hate incidents reported in 2021 increased since 2020 (2), indicating that anti-Asian racism will likely continue to impact the population even as the COVID-19 health crisis recedes.

Despite these caveats, our study makes novel contributions to the growing literature documenting the mental health costs of COVID-19 among Asian Americans. The findings of differential sets of risk factors for mental health outcomes by major ethnic subgroups underscore the importance of disaggregating Asian American data and to attend to the intersecting systems of oppression that shape the everyday lives of this diverse population. For example, we found that South Asian and Southeast Asian Americans perceived more COVID-19 related anti-Asian discrimination than did East Asian Americans, regardless of whether they had been mistaken on the street as Chinese, whereas the adverse psychological impacts of direct discrimination were strongest for East Asian Americans. Although Chinese “street race” in our study was not associated with higher reports of racial discrimination, the construct of street race may still be associated with mental health outcomes outside of the pandemic-fueled racial context (18). Additional theoretical and empirical work on street race among Asian American population may yield further insights into the experiences of racial and ethnic identity. Additional methods for assessing street race, such as having third-party perceptions of an Asian American individual’s race and ethnicity based on facial images (62), may be able to supplement self-reports of being mistaken for another race or ethnicity. Furthermore, we found that being a woman and being on public health insurance was associated with worse psychological outcomes for South and Southeast Asians, but not for East Asian Americans. Given these findings, practitioners and policy makers must attend to a more nuanced understanding of how racism, sexism, and classism intersect to shape the lived experiences and wellbeing of Asian Americans. Moreover, research is needed to understand how colorism, Islamophobia, and the unique historical context of “Brown Asian Americans” inform how Southeast Asian and South Asian groups have experienced what has been commonly understood as anti-Chinese and anti-East Asian

racism during COVID-19, in ways that may be quite different from how East Asian Americans have experienced racism (13). These intersectionalities matter in how civil society responds in more inclusive ways to the diversity of Asian American experiences with xenophobia and racial hostility exacerbated by the global pandemic.

Data availability statement

The raw data supporting the conclusion of this article is available upon request to the corresponding author/s.

Ethics statement

The studies involving human participants were reviewed and approved by NYU Institutional Review Board. The patients/participants provided their online informed consent to participate in this study.

Author contributions

SO, AP, and CSL: conceptualization, methodology, data curation, data analysis, and writing—original draft/review and editing. DC: conceptualization, funding acquisition, writing, review, and editing. NY: methodology, data management, data analysis, data curation, and writing. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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“What support?”: A qualitative study on social support for Asian American victims of racism during the COVID-19 pandemic

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Since the COVID-19 pandemic, anti-Asian racism has surged, yet little is known about Asian Americans' experiences of social support. Therefore, we designed a qualitative, intrinsic, revelatory case study to examine the nature and quality of social support for Asian Americans during the first 6 months of the pandemic. Our sample consisted of 193 Asian Americans (from over 32 U.S. states) disclosing their experiences of inadequate social support. They described their support network as (1) Being unable to relate, (2) Encouraging their silence, (3) Minimizing anti-Asian racism, (4) Denying anti-Asian racism, and (5) Victim-blaming. Regarding our participants' recommendations for increasing social support for Asian Americans, a total of seven recommendations emerged: (1) Legitimize anti-Asian racism, (2) Teach Asian American history, (3) Destigmatize mental health resources to make them accessible for Asian American families (4) Promote bystander intervention trainings, (5) Build solidarity with and beyond Asian Americans to dismantle racism, (6) Increase media attention on anti-Asian racism, and (7) Elect political leaders who will advocate for Asian Americans. Altogether, our findings underscore the need for systemic forms of advocacy to combat anti-Asian racism, and shed light on the injurious nature of social support for Asian American victims of racism.

KEYWORDS

Asian American, qualitative research, anti-Asian racism, social support, COVID-19

Introduction

“[We need] non-Asians to acknowledge that anti-Asian racism and prejudice is not a new thing that happened with coronavirus. And, [we need] Asians to realize this too and stop minimizing the struggles that their parents, grandparents, and friends face just because they have not. Then, [we need to] give Asian Americans more resources to learn about racism; and [we need] Asian American history in order to educate the public. [We also need to] give this education to others as well (along with Black, Native, Hispanic [history], just [as long as it is not] White supremacist centered history).”

The quote above is based on a participant's recommendations for improving Asian American social support due to the influx of anti-Asian racism during COVID-19.

Since the COVID-19 pandemic emerged at the beginning of 2020, overt discrimination toward Asian Americans has been recognized across the U.S. (1–3) prompting increased documentation of anti-Asian racist incidents (4, 5). However, extant literature on “Asian American” and “racism” emphasize individual-level processes (e.g., coping styles, self-esteem, racial identity) with less attention paid to contextual, community, and systemic interventions needed to combat racism. There is little focus on the contexts and people surrounding Asian Americans to address opportunities for meaningful, systemic change. Consequently, the research literature on Asian Americans, racism, and social support, have primarily focused on individual-level points of intervention, with less attention paid to the social support network of Asian Americans, much less their inadequacies in supporting Asian Americans.

There is a small and burgeoning body of research on Asian Americans, racial discrimination, and social support. Social support is generally defined as aid and assistance provided in relationships and interpersonal transactions that is intended to be helpful (6). As a whole, research on Asian Americans and social support have highlighted their underutilization of formal and informal sources of supports. Data on Asian American help-seeking have found that they are half as likely as than White American counterparts to mention mental health problems to friends or relatives, and to also use health services, such as seeking mental health care services or even self-help groups, at a lower rate (36 vs. 56%) (7). In fact, much of the literature shows that Asian Americans tend to rely on informal services preferring spiritual advisors, internet support groups, self-help groups, over formal services, such as from psychologists, family doctors, or other healthcare professionals (8). Particularly in the context of racial discrimination, research has shown that Asian Americans tend to turn to informal sources of social support rather than professional services (9–11). The lack of formal help-seeking among Asian Americans have been attributed to a range of reasons, from mental health stigma in the Asian American community (12), to lack of culturally and linguistically accessible healthcare services (13), to cultural stereotypes such as the model minority myth (MMM), which positions Asian Americans as being a problem-free monolithic group known for being successful, hardworking, and with “cultural values” that make them a “model minority” (14).

Regarding the role of informal social support for Asian Americans, the findings have also been mixed. Measurement issues may be a key contributor of the inconsistent findings, because of how social support is conceptualized and measured across studies. As an example, scholars such as Mossakowski and Zhang (15) measured social support based on frequency, such as how frequently people talked on the phone or got together with family or friends. They also assessed emotional support based on whether participants felt like they could talk to family or friends about their worries, and their sense of family and friends being able to them to help with serious problems.

Other quantitative studies (16–18) have also utilized scales or questionnaires to assess participant perception of social support, such as the degree to which they feel emotionally supported and helped by their family members, being able to open up to friends or romantic partners about problems, and being looked out for by neighbors in their local environments. While these aspects of support are important to understand, these studies ultimately do not allow participants to determine what they subjectively determine to be forms of social support to them; additionally, it is unknown how salient social support may be from one person to another. That is, the social support identified by researchers may or may not be relevant or even salient to some peoples’ lived experiences. Additionally, while some researchers study family and friends separately, others make further delineations by distinguishing romantic partners from other family members, or by studying all of these different groups. Finally, given that the existing body of scholarship is primarily quantitative, the research designs inherently rely on researcher operationalization and identification of constructs and instruments to assess social support. In these ways, participants do not have the opportunity to share what is uniquely and subjectively considered to be their forms of support, nor are they able to provide feedback on the quality of the support that they receive (and the lack thereof).

In the context of racial discrimination, researchers have largely treated social support as a form of coping. That is, research on the social support of Asian American adults experiencing racism has been rooted in the premise of social support being a buffer. Social support is often tested for its effects in moderating the effect of racism on psychological distress and adverse mental health symptoms (e.g., depressive symptoms, anxiety, loneliness, trait anger). However, the buffering effect of social support has been mixed and nuanced across different networks of support. With regard to social support from family members, Chae et al. (19) found that family support buffers the effects of racism for those who experience lower rather than higher levels of discrimination. Their work underscores the importance of family for those who experience lesser discrimination. In contrast, however, Wei et al.’s (20) work found that family support is not particularly helpful and that they fail to protect Asian Americans from the detrimental effects of racial discrimination. Adding to this complexity is Mossakowski and Zhang’s study examining family and peer support (15), in which they found that only certain kinds of family support buffer the psychological distress of Asian Americans (i.e., emotional support in the form of being able to rely on family for serious problems), but that other kinds of family support (i.e., frequency of talking about worries to their family) were not helpful. Because these scholars also incorporated peer support in their study, they found that peer support did not protect Asian Americans from psychological distress. That peer support is less helpful than family support has been contested by the findings of Singh et al. (21) when they found that friend support and not family support

moderated the association between Asian American experiences of discrimination and psychological distress. These findings paint a mixed and nuanced picture regarding the role of family and peer support for Asian American victims of racism.

The supportive role of spouses and romantic partners has also been mixed. For the most part, spousal support has not been shown to protect Asian Americans from the effects of discrimination. That is, Rollock and Lui (18) found that although spousal support buffered stress that is related to general unfair treatment, partner support did not offer a protective role against racial discrimination. Thus, it seems that partner support is useful only within the context of overall injustice experiences, but not when it pertains to racial discrimination. Adding to the nuances is work by Chung and Epstein (22), in which the researchers found that not only did spousal support fail to buffer the effects of racial discrimination on distress, but spousal strain actually heightens the association between racial discrimination and psychological distress. These findings suggest that the role of spouses may be more detrimental than helpful in the context of Asian American racial discrimination.

It would seem then, that the social support literature captures complexities and richness in terms of the role of support systems for those experiencing racial discrimination. In fact, studies examining partner and family support have shown that they may actually contribute less to the wellbeing of Asian Americans; and instead, contribute to greater distress. Kwon's study (23) examined the mediating and moderating effect of family and spousal relations on perceived discrimination and psychological distress and found that both family cohesion and spouse/partner support did not provide a buffering effect; furthermore, negative family interactions can actually worsen things, such that family conflict exacerbates the effects of discrimination. Taken together, these findings underscore the need to understand the impact and quality of social support rather than assuming positive intent. Even more broadly, there is a need to understand how Asian Americans experience social support, and to learn about their interpretations of social support in the context of racial discrimination.

Despite the need to understand Asian American experiences of support amidst racial discrimination, research in this area has largely lumped together the different sources of social support, whether it is family, partner/spousal, friend, colleague support. Even outside of the focus of racial discrimination, scholars have found statistically insignificant findings when testing the stress-buffering effect of general social support among Asian Americans, such as among Indian American (24), Afghan American (25), and Filipino American (26) populations. As such, more scholarship is needed on Asian American social support to explain the nuanced findings.

In recognizing these limitations, our study builds on the existing scholarship on Asian American social support and racial discrimination. Our goal was to examine experiences of inadequate social support for Asian Americans, based on real-life experiences of when they sought and received social

support in the aftermath of COVID-19-related anti-Asian racism. To do this, we designed a qualitative research study using open-ended questions to inquire about their social support experiences. We did not make any a priori assumptions or pre-determined definitions of social support. Our purpose was to understand how participants interpreted the quality of their social support (or lack thereof) and to solicit recommendations for providing better support. By examining the impact rather than the intent of social support for Asian Americans, our research study allowed for the possibility of understanding how social support fails Asian American victims of racism, and how it can be improved.

Methods

We designed this study to be an intrinsic qualitative case study (27), which is a research design intended to capture a phenomenon in a single case that is bounded by time and space. The phenomenon for this study was social support, specifically the inadequate social support received by Asian Americans during a time of intensified anti-Asian racism. In terms of time, our study was bound to the first 6 months of the COVID-19 pandemic, from April to October 2020, during a period of increasing anti-Asian violence. Because case studies are also bound by space, we focused exclusively on the experiences of Asian Americans in the U.S. context. Given the timing of our study, particularly during the onset of the pandemic the study became a revelatory, intrinsic case study due to the uniqueness of the contemporary event.

Positionality/researcher stance

Our research team was comprised of the first and second authors, both of whom identify as Asian American and Asian international, respectively. Like our participants, we were also affected by the surge of anti-Asian racism accompanying the COVID-19 pandemic. That is, we were also part of the revelatory nature of our research design. At a time in which the country was going through social distancing and sheltering-in-place, our research team was also living the same kinds of experiences as our participants. For example, our study was conducted entirely online, with all of our research meetings held virtually through Zoom or *via* phone calls. Consequently, in reflecting on our biases, we were vigilant about how we might over-identify with our participants' experiences.

Participants and sampling

To be eligible for this study, participants had to be at least 18 years of age and self-identify as "Asian American." English proficiency was not an exclusion criterion; however, the study

was only available in English. All of the data were based on self-report. We relied exclusively on online methods, given that our data was collected during a time of sheltering-in-place. We began recruitment through Asian American organizations nationwide using the Google search engine, contacting 102 organizations and following up with them twice. Additionally, we contacted active social media accounts that addressed topics pertaining to diversity, minority mental health, activism, and Asian American and other POC communities, in total, contacting 12 Instagram influencers and nine Facebook groups, to ask for assistance in disseminating our study to their audiences. Additionally, the first author promoted the study in webinars and presentations that centered on anti-Asian racism in the COVID-19 pandemic. Due to the sensitive nature of the survey questions, we did not collect any additional demographic information from the participants. No financial compensation was offered for completing the survey.

Data collection and procedure

The current investigation is part of a larger project on anti-Asian racism during COVID-19 [for more information about methodology, see (27)]. Data for this study were collected online through open-ended questions in the Qualtrics platform. For this manuscript, the responses we analyzed had to do with participants' experiences of support during the COVID-19 pandemic. Specifically, we asked whether participants were able to find support after experiencing anti-Asian racism. Additionally, we followed up with, "If so, from whom/where? If not, what kind of support was missing?" We also asked general questions like, "Have you felt supported or not supported as an Asian American during the COVID-19 pandemic?", as well as their hopes for support ("If you have not felt supported, or if you would like more support, what resources do you wish exist for the Asian American community?"). Finally, we asked for their recommendations for empowering the Asian American community ("What could help the Asian American community better respond to anti-Asian racism?" and "How could the larger society, especially non-Asian Americans, help to empower the Asian American community?"). All protocols and materials were approved by the Institutional Review Board at Santa Clara University.

Data analysis

We utilized the explanation-building technique within a case study design to explain "how" or "why" a phenomenon occurred (28). Yin (28) has described this analytic technique as a type of pattern-matching that focuses on building explanations. That is, because our study phenomenon had to do with our participants' experiences of social support, we analyzed the data to examine

how respondents defined, explained, and experienced social support and its consequences. We also followed Braun and Clarke's six stages of thematic analysis (29), which follows a process of building familiarity with the data, reading the answers by participant, by question, identifying initial emerging themes, and then corroborating the themes through an iterative process of revisiting each response for deeper immersion in the data. We chose quotes that would most powerfully convey our participants' experiences. Regarding coding disagreements, we discussed them until consensus was reached, whenever they emerged. Although power dynamics are relevant in any research team, we specifically devoted substantial time and attention to discussing and acknowledging the power differentials in our research team as well as taking notes in reflexive journals and memos.

Data validation

To establish the credibility of this study, we used key strategies that have been implemented in qualitative research to enhance methodological rigor: triangulation and researcher reflexivity (30). Our data was triangulated across a wide range of participant responses given our large sample size and the rich findings that emerged. We also engaged in researcher reflexivity throughout the data analysis by reflecting on our biases and assumptions through the form of self-reflective journaling.

Results

A total of 201 participants completed the study, but due to missing data, only 193 participant data were included for data analysis. Participant ages ranged from 18 to 65+ years of age. More than two-thirds of the participants (69%) identified as younger than 34 years (35% were 18–24 and 34% were 25–34), followed by the 35–44 age group (18%). Approximately 9% reported being in the 45–54 age range and the category of 55–64, and 65 or older each reflected 1% of the data. Participants resided across 32 states, District of Columbia, and Puerto Rico or lived outside of the U.S. at the time of survey completion. A majority of respondents were from California (40%) and New York (12.5%).

Participants experienced a wide range of responses from their support systems. In describing the ways that they were not supported, a total of five themes emerged, ranging from being minimally harmful to most harmful. These were: (1) Being unable to relate to anti-Asian racism, (2) Encouraging silence, (3) Minimizing anti-Asian racism, (4) Denying anti-Asian racism, and (5) Victim-blaming. Additionally, our participants identified that their perpetrators were White partners/spouses,

White peers, family members, Asian American friends, non-Asian People of Color friends, as well as unspecified “others.” The latter group included people such as their colleagues, neighbors, and their online network. A visual overview of these findings can be found in [Table 1](#). In the sections below, we discuss each of these themes before presenting participants’ recommendations for how to better support victims of anti-Asian racism.

Being unable to relate

Participants described how they needed, craved, and hoped to receive support in the aftermath of racist experiences; yet, they were let-down by the responses of well-meaning and well-intentioned people. They specifically named White partners/spouses and White friends as people in their support network who were unable to understand their experiences of racism. White partners/spouses, in particular, were unable to relate to our participants’ experience, which exacerbated the loneliness they already felt. That is, not only did participants already feel alone from their experiences of being victims of anti-Asian racism; the subsequent experience of having no one understand their experience exacerbated their sense of isolation.

I talked about this incident with my spouse, who is a white European immigrant. He listens empathically but does not share my fears... I do not feel that any one close to me truly understands how distressing it is to me.

Participants acknowledged the good intentions of White friends, colleagues, and partners trying to support them, by adding caveats and background information, such as “he’s very understanding but has trouble relating...” or “I did get some support from him... but... it made him uncomfortable.” In another scenario, when a participant described having the support of White friends during a time of social distancing, the participant described them as being “unable to truly understand why I am so paranoid about going outside even to buy essential goods.” Additionally, people in positions of authority, such as professors, bosses, and supervisors were described by our participants as being unhelpful given that “none [of them] were able to personally relate” to anti-Asian racism.

Our participants also identified the limitations of family members, specifically Asian American parents and siblings, regarding their inability to offer emotional support:

Asian parents aren’t the most supportive. At least my parents aren’t. There’s no hand holding, no hugs, no “are you alright?” You’re supposed to be smarter than everyone and not shed a tear.

One participant shared, “I wish my own family would emotionally support me more” while another explained that they do not talk about racism with their mother or siblings because “we don’t talk about our feelings with each other.” Thus, participants also felt that their family members were unable to relate to them since their families were described as being incapable of providing emotional support.

Encouraging silence

This theme refers to the messages relayed to our participants for them to be quiet, stay silent, and avoid drawing additional attention to anti-Asian racism. Below, a participant shares their experience of their family’s intergenerational transmission of racial trauma, referring to the salience of the Japanese internment camps in their present-day experiences. They describe how their grandparents and parents have been socialized to be silent and to stay under the radar:

I grew up with the terror of internment camps looming in our family history. My grandparents refused to give my mom and aunts/uncle Japanese names, they never spoke Japanese again (therefore the language stopped with my grandparent’s generation) they were afraid that it happened once, it could happen again. Even to this day my mom, and aunts/uncle are very scared of speaking up or making waves.

Participants especially emphasized their parents’ role in socializing them to be silent, such that they were “taught to lay low, work hard, don’t ruffle feathers, and assimilate.” Another participant stated: “my parents taught me, scratch that, they basically threatened me to be quiet. Be a good kid and not speak. To never cause a scene and to never start something controversial.” One participant stated, “I was taught by my parents to just put my head down and keep going—that talking about it was bringing unnecessary attention (causing drama).” As such, our participants received implicit and explicit messages from family members to maintain a culture of silence about anti-Asian racism.

Beyond the family, our participants also shared their disappointment with Asian American friends and peers for maintaining this same culture of silence.

I have not [felt supported]. I’m very vocal about race issues with the Asian community and most of my peers (majority Asian) choose to shun it out and avoid the topic... Our community has not spoken up, shared our frustration, and made any noise on the issue. I’m deeply disappointed in my Asian peers who kept quiet. It’s hard enough for the vocal ones; but, to not even have the support of our own people makes it that much harder.

TABLE 1 Experiences of inadequate social support by type and people.

	White peers	White partners/spouses	Family	Asian friends	Non-Asian POC friends	Unspecified “others”
Being unable to relate	X	X	X			X
Encouraging silence			X	X		
Minimizing anti-Asian racism	X		X	X	X	X
Denying anti-Asian racism	X	X			X	X
Victim-blaming	X		X		X	X

Participants therefore reported feeling disappointed in, dismayed by, and even angry at fellow Asian Americans for their silence. They described feelings of isolation, with one participant sharing, “I wish, in general, my Asian American friends were more open in talking about their experiences.” The same participant added, “I just want another Asian American to completely share their feelings with me so I don’t feel alone... an Asian American adult ally who I could share experiences with.”

Minimizing anti-Asian racism

Participants described instances in which their support system responded to their experiences of racism by either downplaying the severity of the incident, minimizing the participants’ distress, or both. Participants described these to be normative experiences, such that “most of the White people I know have been passive or even told me to get over it.” Even in relaying these experiences to their parents, participants received similar messages that they needed to just “get over it.” Below, a participant describes not only the pain of being victimized by racism, but also the pain of having their parents downplay their distress.

I also wish my parents would have been more openly understanding of how hurt I felt whenever people were racist/discriminatory to me. Too often, my parents said that I should “brush it off.”

These quotes capture our participants’ experiences of having their racial trauma trivialized. In other situations, participants noted that they could not even find spaces to talk about their racial trauma. Put succinctly, one person shared: “I wasn’t able to find support. Even if I tried, people around me talked over it, claiming their experience is worse.”

Participants described the pressure of needing to prove the severity of anti-Asian racism to be able to gain the empathy and support of others. Additionally, they received messages that anti-Asian racism is “not as bad” when compared to the racism of other People of Color. That is, Asian American racism was considered to be acceptable because of how tolerable microaggressions were against Asian Americans, and how

frequently they were “normalized as OK behaviors” in the larger society. One participant added that Asian Americans internalize these beliefs as well: “Asian American racism is often minimized because we usually get the ‘good stereotypes.’ Even though we experience racism fairly regularly in this country, we tend to brush it off because we know that it is not as concerning to people and because the Asian American community in general, does not like to talk about big issues like this.” As such, the minimization of anti-Asian racism seemingly came from everywhere: from within the Asian American community, to non-Asian People of Color, to White people.

Denying anti-Asian racism

Participants described instances in which their support network invalidated their victimization, altogether. One respondent recalled disclosing a racist incident to their White European immigrant husband, who subsequently justified the victimization by suggesting, “maybe he [the perpetrator] thought you were pretty.” The participant added that “[my husband] thought I was exaggerating.” In another situation, a participant described having multiple people in their life invalidate their experience of racism. Specifically, “many White friends said I was just paranoid and making a big deal out of this. They said I was just trying to play victim and spreading paranoia.” Therefore, White partners as well as White friends seemingly responded in ways that not only dismissed the distress of the participants, but they created greater harm by making light of the situation and telling the victim that they imagined the incident to be more severe than it was.

Participants described the ways in which non-Asian People of Color, namely Black and brown people, invalidated their experiences of racism by refusing refer to Asian Americans as People of Color and consequently denying the existence of anti-Asian racism altogether. One participant shared: “[Anti-Asian racism has] been dismissed so hard by other minorities, it is extremely frustrating (such as being called Not a POC, racism against Asians isn’t real, and more).” In some circumstances, our participants did not specify who their support system was and as a result, it was unclear who they were referencing when

they referred to these unspecified individuals. However, these unspecified others contributed to invalidating our participants' experiences of racism by denying Asian American racism and therefore, denying the distress of those who were victimized by anti-Asian racism.

I told some people and they were always somehow surprised, as though this couldn't possibly happen. But it was and it wasn't surprising at all. It was barely even a step up from the normal amount of discrimination I experience, so it felt, sadly, normal to me. Some people told me that it wasn't happening, I was imagining it, or that it wasn't as bad as I make it out to be.

Victim-blaming

Our participants described instances in which their support network not only failed to support them, but instead, blamed them for their victimization. In one incident, a participant talked about an instance of having their racist victimization turned against them so that they were treated like a perpetrator instead of a victim. Referring to a White friend, one participant shared, "She... could empathize, but only to a certain extent... asking if I was the initial aggressor or if I did anything to them." In another situation, a participant described a female White friend as being "dismissive" in that "she blamed the virus on Chinese people and asked me (an Asian American born in the USA) why Chinese people eat weird shit like dogs and bats." Additionally, with family members, participants also described instances in which members of their support system blamed them by asking them what they did to elicit racism. One participant shared, "I told my mom what had happened. She is the typical Asian mother who finds fault in me for everything and asked if I had done something wrong to provoke it."

Given that participants also looked to online support during a time of sheltering-in-place and social distancing, they also referred to experiences of being blamed online. Upon reading the writings of an African American blogger, one respondent said:

They claimed that we "had this coming" and "deserve to get hurt for once" due to appropriation of Black culture from K-pop, and general anti-blackness from Asian American communities. It was our turn to die from racism.

Therefore, even though participants shared that they looked to the online community for support in the midst of heightened anti-Asian racism, the virtual space also became an environment that created greater harm. In another situation, a participant shared that they "[saw] a Black community

online discuss how they have no reason to support Asian Americans because we've never done anything for them and they blame Asian Americans for racist acts that China has done." Thus, despite the many benefits of finding community and belonging online, the virtual space was also an environment of scapegoating and blaming Asian American for experiencing racism.

Building on our participants' lived experiences of social support, we asked follow-up questions to solicit their recommendations for better supporting Asian American victims of racism. A total of seven themes emerged, with each theme highlighting systemic-level changes to provide support for Asian Americans. In presenting our findings, our seven themes align with the "most effective solutions in addressing anti-AAPI hate" identified in the Stop AAPI Hate two-year advocacy report (31) and across their three categories of education equity, community solutions, and civil rights. In the category of education equity, our participants recommended the following: (1) Legitimize anti-Asian racism and (2) Teach Asian American history. With regard to community solutions, our participants highlighted the need to (3) Destigmatize mental health resources to make them accessible for Asian American families, (4) Promote bystander intervention trainings, and (5) Build solidarity with and beyond Asian Americans to dismantle racism. Finally, in the category of civil rights expansion, our participants underscored that to do this, our society would need to (6) Increase media attention on anti-Asian racism, and (7) Elect political leaders who will advocate for Asian Americans. Each of these themes are presented below.

Legitimize anti-Asian racism

Participants believed that acknowledging racism toward Asian Americans is a critical step to advocate for Asian Americans. One participant stated, "They [the larger society] need to understand that Asian Americans experience racism and discrimination." Participants emphasized the need for Asian Americans to be able to name anti-Asian racism and to be able to conversations about it:

I think talking about it and naming it would help. I was taught by my parents to just put my head down and keep going—that talking about it was bringing unnecessary attention (causing drama). My dad and my brothers still refuse to acknowledge that we are "people of color." I think we need to be able to talk about these issues openly and validate that this IS real and it IS racism.

Participants further noted the need for everyone to know the long-standing history and nature of anti-Asian racism, so that it is not assumed to emerge solely from COVID-19 stigmatization:

There should be an explicit mention that anti-Asian racism is NOT a new phenomenon that will wax and wane with COVID; instead, COVID and the rhetoric surrounding COVID have given others an outlet for expressing already-situated hate.

Thus, validating the distress of Asian American victims of racism is central for supporting Asian Americans. However, this can only be possible if the larger society recognizes and understands how Asian Americans have been historically and chronically overlooked and excluded from discourse on race and racism. Legitimizing anti-Asian racism would therefore mean that Asian Americans can finally be recognized as victims of racism, rather than be seen as immune and irrelevant to race, racism, and other communities of Color.

Asians have always been excluded in any discussion of race in the US. We were told to stay silent and to deal with the kind of racism we received because it wasn't as bad as it could be. And so, with the rise of hate crimes, it almost felt like we were allowed to express frustration.

Participants emphasized the need for Asian Americans to be included in anti-racism efforts, rather than to minimize and deny anti-Asian racism as a form of oppression that is less valid and less pervasive than racism directed toward other People of Color, specifically, their Black and Brown counterparts.

Teach Asian American history

Participants highlighted the need to teach Asian American history in mainstream education to educate the general public. One participant implored, "People need to open their eyes to the reality Asians face. It is not a joke and racism should not be taken lightly." Another participant stated that educational efforts may help with "recognizing the ways in which anti-Asian discrimination is normalized and seen as 'less bad'." Participants cited the history of Asian American discrimination and marginalization that dates back to the beginnings of the U.S. as a nation:

I do wish that the recognition of anti-Asian racism was discussed more in our broader society - I feel like the majority of people, including Asians, are not aware of the long history of anti-Asian racism in this country and still hold to outdated beliefs that Asians are not the victims of racism. So, I guess I wish that there was more of a presence of Asian histories and cultures in the way we educate our kids and when we talk about issues in our society.

It is important to note that the recommendation to teach Asian American history meant providing this information to the American public in general as well as to Asian

Americans. That is, Asian American history should be taught to all members of society. A participant shared they were embarrassed to admit they did not know about the Chinese Exclusion Act until they took a college course on Asian American experiences in America. Another participant reflected on the absence of Asian Americans in their history classes despite living in an Asian ethnic enclave. Yet another respondent shared that "Asian Americans, by knowing their history deeply, can better understand and use other tactics to respond to racism." Participants therefore urged for the inclusion of Asian American history in general American education, such as in mandatory K-12 curricula, to facilitate a critical racial consciousness of Asian American racism for all.

Destigmatize mental health resources to make them accessible for Asian American families

Participants spoke to the need to increase access to mental health resources for Asian Americans. One participant stated, "I wish there were more support groups for Asian Americans to come together, talk, and support each other. And more readily available mental health resources, advice, tips specifically for Asian Americans." Participants emphasized the stigma surrounding mental health care, naming stigma to be a key barrier in seeking help and support. However, one participant emphasized that supporting Asian Americans meant more than "breaking down the stigma of therapy in the community." They added that there needs to be "more counseling resources made readily available across generations." Thus, the stigma of mental health was particularly emphasized as an intergenerational concern. One participant asserted, "Even if you told my parents about the mental health consequences of racism, they won't believe it because they don't believe in therapy or accessing behavioral health services." Another participant made a similar point about the need for mental health resources for older generations to support younger Asian Americans facing racial discrimination:

In my circle of Asian friends, we always felt that we don't receive much talk about mental health in our families. It seems like a new thing to our parents and relatives that we don't know how to deal with. Sometimes the things we read or hear affects us on a deeper level and makes us dislike being Asian and the desire to cast our culture aside becomes stronger. Having mental health resources to strengthen our resiliency and focus less on the negativity would be helpful.

Participants suggested creating spaces for intergenerational dialogues. A participant suggested the following: "conversations on intergenerational perspectives on mental health could be

helpful, especially as it relates to ‘self-care’ and older generations considering it to be ‘selfish’ [since] the Asian American mode of operating is self-sacrifice.” Participants added that language barriers between generations added to the difficulty of having conversations about mental health. As such, they also called for linguistically-sensitive mental health resources to be able to bridge cultural and generational differences within Asian American families.

Promote bystander intervention training

Participants recommended widespread training for the general public to know how to intervene as witnesses of a racist incident. A participant who suggested bystander intervention training commented, “In every instance of racism I’ve experienced, the people who witnessed it never stood up for me. We need people who witness these incidents to speak up and step in to help.” Another participant mentioned feeling shocked and paralyzed by the racism and said, “I needed the White people around me to speak up and they never do.” Participants generally believed that bystander interventions would more effectively address anti-Asian hate incidents than being “keyboard warriors.”

I’d love to have more people trained or even just provided with more information on bystander intervention... using hashtags or whatever on Twitter doesn’t make a difference when you’re seeing someone being harassed right in front of you.

Participants saw bystander intervention training as taking a proactive stance in addressing racism. One participant thought that it could be a way to mitigate victim-blaming:

I attended a bystander intervention training and I thought that was really helpful. It is more useful to educate non-Asian individuals about their biases than to put the responsibility of fighting anti-Asian racism on the Asian community. It is like asking a sexual assault victim to hold the assaulter’s actions accountable. It should not be that way.

Bystander interventions were therefore recommended for combatting anti-Asian racism because of the onus placed on societal responsibility rather than on Asian Americans to stop anti-Asian racism.

Build cross-ethnic and cross-racial solidarity to dismantle racism

Participants expressed a desire to build community and solidarity across Asian Americans ethnic subgroups,

as well as with other racial groups. Within the Asian American community, participants recognized Asian American divisiveness (e.g., “inner-Asian racism,” “Asians against Asians”) and named issues like colorism, the model minority myth, anti-Blackness, “East Asian privilege,” and other within-group conflicts across the Asian American diaspora. One participant recommended that Asian Americans “deeply reflect on our own racist attitudes and behaviors.” To better support Asian Americans, another participant implored:

[We need] a sense of community, a way to foster an Asian American identity that can be separate but also inclusive of different Asian Americans. If there is a greater sense that, for example, a Chinese person and an Indian person and an Indonesian person belong to a larger Asian American community in addition to their own respective communities, then there might be a greater sense of urgency on everyone’s part if one group is targeted.

Participants believed that solidarity within the Asian American community could lead to more effective action and advocacy against racism. One participant stated, “Allowing [more] conversation to happen within the [Asian American] community will enable us to hold a stronger position in support of other communities of Color and ultimately work toward eliminating systemic racism.” Thus, participants saw a clear connection with anti-Asian racism and racism directed towards other racial minority groups. Therefore, they recognized the need to strengthen cross-racial solidarity and to speak up against racism against other communities.

In general, participants recognized their “shared fate” and “shared history of oppression” with other People of Color. One participant asserted the need to “connect with other marginalized groups to build bridges so we can support each other.” Another participant echoed this, saying “We as Asian Americans need to stand in solidarity with other communities of color.” Ultimately, participants called attention to the importance of dialogue and building allyship across People of Color as well as white allies. One participant stated, “[Racism] is bigger than all of us, we all need to band together and help one another.” Another participant expressed the process of arriving at their realization for cross-racial allyship and solidarity:

At first, I was resentful to other minority communities and the rest of society for not defending us and expressing outrage to our targeted racism. But then I realized Asians have been quiet when other communities have suffered and not enough of us stood together to support others. I would love to see more campaigning against white supremacy and see all communities banding together to learn how to stand up for one another...

Increase media attention on anti-Asian racism

Participants were consistent in naming the lack of mainstream media coverage on anti-Asian racism during COVID-19, remarking “the media is not very focused on [anti-Asian racism],” “mainstream media is not covering this topic well” and “I wish the media is not underreporting the racism crime against Asians.” One participant said, “I just wish the media covered our situations more. It genuinely just feels like nobody cares about us.” To address general skepticism of anti-Asian racism, another participant talked about the role of media campaigns “to raise awareness on the issue [anti-Asian racism]: both to increase visibility but also to establish it as a legitimate issue.” Participants recommended less stereotypical portrayals of Asian Americans in the media to potentially combat anti-Asian racism. One participant highlighted the need for Asian American news to be disseminated in national outlets and not just restricted to local Asian American platforms:

It would help if media and mainstream media would acknowledge us and help our stories be heard. Change comes from being educated and aware. We’ve got to do both and make it seen and heard, to get the message to mass America and not just within our Asian American communities.

Participants therefore looked to mainstream media outlets as a resource for raising their visibility and combatting stereotypical images of Asian Americans. In this way, they placed their hopes on media campaigns to be able to make anti-Asian racism visible and relevant to the U.S. society.

Elect political leaders who will advocate for Asian Americans

Participants emphasized the role of government officials and community leaders in advocating for Asian Americans as they face racism and stigmatization during COVID-19. Several participants expressed concern and outrage over politicians who “stoke the fires” by using words like “kung flu,” “Chinese virus,” and “China virus.” To counter this, one participant recommended, “Community leaders and lawmakers should make an effort to make visible/audible their support of the Asian community when possible.” Another participant added, “If people in more powerful positions can speak up and admit the racism against Asian Americans, it would help the Asian American community feel less weak and helpless.” Yet another respondent suggested that public leaders should do more than offer verbal condemnation: “Leadership/government should not only call out racism and discrimination (which is performative) but also implement policies, events, campaigns to

reduce discrimination for sure...” Participants recognized their ability to hold government officials accountable through their voting power. One participant said, “Asian Americans should be empowered to vote and elect officials that can help with our cause.” Another participant echoed this:

We as Asian Americans cannot afford to sit back and just be satisfied with others bearing the torch for change. We, too, need to be involved and take the most important action that we can: VOTE.

Participants therefore emphasized the need to amplify Asian American political visibility by voting for leaders who will combat Asian American stereotypes, speak out against the existing anti-Asian rhetoric, implement policies and practices that eradicate discrimination, and empower community members to engage in local and national politics.

Discussion

Our study is the first to qualitatively examine the phenomenon of social support by asking participants about the nature and quality of support received during a time of heightened COVID-19-related anti-Asian racism. Using open-ended questions to inquire about Asian American experiences of social support, our qualitative investigation allowed participants to evaluate the quality of social support that they received in the aftermath of anti-Asian racism. Specifically, our study invited Asian American participants to share how their support systems failed to meet their needs as victims of anti-Asian racism. Additionally, when asked to provide recommendations to improve the social support of Asian Americans, they provided concrete suggestions at the societal and systemic level to underscore the need for collective change to support Asian Americans from anti-Asian racism.

A main takeaway of our findings is that when Asian Americans seek informal support in response to their actual and lived experiences of anti-Asian racism, they receive responses that can lead to greater victimization rather than support. Specifically, our participants provided examples of “support” that left them feeling isolated, misunderstood, gaslit, and even blamed. It is therefore crucial to recognize that well-intentioned social support networks can cause greater harm and victimization, by further wounding those who are already victims of racist marginalization. Our study showed that in the aftermath of anti-Asian racism, it was primarily family members, friends, and partners, who they went to for support; yet, it was also these confidants who offered inadequate support and perpetrated greater harm.

Our descriptive findings help to explain the mixed research findings on Asian American social support and discrimination. In particular, our findings elucidate the reasons why participants may feel even more marginalized upon soliciting support. In the

current investigation, our participants' utilization of informal support led to them feeling isolated, misunderstood, invalidated, and even blamed for being victims of racism. Our descriptive findings explain the contradictory findings that have been shown in studies examining racial discrimination and the support-seeking strategies of Asian Americans (32, 33). In studies by Liang et al. (32) and Alvarez and Juang (33), both found that active solicitation of social support was inversely related to psychological distress. Specifically, Liang et al. (32) found that Asian American men's experiences of racism led them to seek more social support, which then led to heightened racism-related stress. Describing these findings as "counterintuitive" and "contrary to [their] expectations," the authors speculated that the beneficial effects of social support may not be there for helping individuals cope with racism, and that more scholarship is needed to understand accessibility, type, and quality of social support. Similarly, Alvarez and Juang's work (33) found that among Asian American men, support seeking was found to be a mediator with a positive relationship with psychological distress. They, too, concluded that a more refined analysis is needed to understand the nature and quality of support that individuals seek and obtain in response to racism. Given the quantitative design of these studies, the extant literature has not been able to explain why Asian American experiences of social support can contribute to greater rather than lesser distress. Our findings fill a gap in the literature to explain how Asian Americans experience victimization from their support networks, given the focus on impact rather than intent of social support.

Without ever asking participants to provide details about the racial background of their support network, our participants spontaneously offered the racial identities of their support systems. Specifically, White partners/spouses emerged consistently in our analyses as being unable to provide the kind of support that our participants needed. Additionally, when our participants described their experiences of failed social support, they provided racial context to distinguish the kinds of support offered by White friends, Asian American friends, and non-Asian People of Color friends. Our findings underscore the importance of assessing the racial identities of participant social support networks, especially in the context of seeking support for racial victimization.

The harmful consequences of social support from White people were noteworthy in this study, and highlighted the critical role of White partners/spouses and White friends. Research on the protective effect of spousal support has paid little attention to spousal racial identity and its implications. This can explain why, in secondary archival data analysis of national data, Rollock and Lui (18) only saw the buffering effects of spousal support against distress associated with unfair treatment, but not racial discrimination. In contrast, qualitative work by Lowe et al. (34) has underscored the critical role of White partners/spouses in exacerbating the racial trauma of those seeking support after racist victimization. Additionally,

in examining the role of friends, Mossakowski and Zhang (15) found little value for friend support. In other studies (22–25), the social support of romantic partners, friends, and family members have all been studied together, rather than independently assessed for their unique contributions. The descriptive nature of our study findings sheds light on the unique role of each type of confidante and the harm they can inflict on Asian Americans seeking support in the aftermath of racism. Clearly, there is a need to recognize the differential harm that can be perpetrated by one's support system.

Qualitative research by Lowe et al. (34) has shown that People of Color experience secondary injuries when confiding in others about racism. Even more, in their study on racism, trauma, and coping, the authors concluded that "what felt most injurious [to the participants] was when a confidant would minimize participant experiences, dismiss the significance and impact of a racist event on them, question their interpretation of the event, and invalidate their thoughts and feelings..." (p. 194). The themes in our study build on this theme to delineate the range of "injuries" committed by members of their support system. Given that our participants were already victims of racism, we underscore the work of Lowe et al. (34) to attend to trauma-informed responses to support victims of racial discrimination.

An important finding in this study is that Asian Americans are not immune to perpetrating additional racial trauma toward one another. American families and friends added to the "injury" of Asian American victims of racism. Gee et al. (35) found that family members contribute to being a barrier in Asian American help-seeking and mental health service utilization. In addition, other studies have found that family factors (e.g., conflict and cohesion) and generational status affected Asian American use of mental health services (36, 37). Thus, our findings are consistent with our participants' recommendations to improve social support by de-stigmatizing mental health in ways that attend to intergenerational differences within the Asian American community. While it is not novel to conclude that stigma, beliefs about the causes of mental illness, and unfamiliarity with mental health services are cultural barriers for Asian Americans to utilize mental health services (38). However, because Asian American families and friends can add secondary injury to those needing social support, our findings underscore the need to enhance Asian American mental health literacy to better support the multiple generations of Asian Americans suffering from racial trauma.

The revelatory nature of our study is an added contribution to social support literature. It is important note that our participants participated in this study during a time when COVID-19 was evolving from an endemic to a pandemic, and parts of the U.S. were enacting policies such as social distancing, working from home, and sheltering-in-place. As such, the revelatory nature of our study may have successfully captured the most crucial people in their support network,

specifically, their inner circle. As a result of COVID-19, our participants likely did not have opportunities to conveniently run into acquaintances given that they were not able to leave the house. By being restricted to their homes, the people they solicited for support were likely to have been their most-trusted confidants. Consequently, the revelatory nature of our study likely allowed us to identify those individuals who constitute the most important roles in their support network: romantic partners/spouses, parents and siblings, friends, and “others,” such as colleagues, neighbors, and their online communities.

Regarding future scholarship examining the mediating and moderating effects on social support on racism and Asian American wellbeing, our findings suggest that the frameworks used to study social support must be expanded to account for systemic influences. A focus on individual coping may be overly narrow, and more scholarship is needed to examine the quality of social support. Additionally, despite the growing body of scholarship on Asian American stress and coping (32, 39), it is important to recognize that the stress-coping framework seemingly assumes individual-level responsibility by focusing on an individual’s capability to cope with and heal from anti-Asian racism. That is, the stress-coping framework focuses on individual capability—namely, the ability for an individual to cope with racism depending on whether they are able or unable to access resources to respond to harmful events (40). However, coping should not be conceptualized as an individual-level experience, but instead, one that has to do with cultural and environmental supports and resources. Noh and Kaspar (41) have cautioned that it is important to recognize individual access to capital such as social resources and educational capital. In the current study, our findings underscore the importance of adequately supporting Asian Americans by placing the responsibility of racism on the larger society and not just to Asian Americans or even their immediate social support system. To meaningfully improve Asian American social support, all of the recommendations provided by our participants target societal accountability rather than individual- or even community-level responsibility. Supporting Asian Americans therefore requires de-stigmatizing mental health, increasing representation of Asian Americans in media and political spheres, making Asian American history part of the academic curriculum, and acknowledging anti-Asian racism as a long-standing part of U.S. history.

As an example, the legal requirement in California to include ethnic studies in high schools resembles one way in which public education can be used to dismantle white supremacy. Additional forms of institutional and structural support are needed to combat racism, especially given the 2021–2022 backlash to racial justice policies. As of 2022, 28 states have introduced or taken steps to restrict the teaching of Critical Race Theory or limited how teachers can discuss racism, with 11 states enacting these bans through legislation or other avenues (42). Thus, while our participants underscored the importance of teaching Asian

American history for empowerment (43), their message also highlights the need for societal interventions to intervene and also prevent racism: through public education and media (44), increased political involvement (45), and cross-racial and cross-ethnic forms of coalition-building (46) *via* ethnic studies. With regard to Asian American health inequities, this also means investing in clinical research with Asian Americans, given the underrepresentation of Asian American funding in the National Institutes of Health research budget (47).

That participants underscore the need for collective, societal learning underscores the need for all communities and not just White societal members to confront their stereotypes and assumptions about Asian Americans. This need is particularly urgent given the data that has shown that one-third of Asian Americans nationwide fear threats, physical attacks, and violence; and that approximately 80% perceive violence against them to be increasing (48). Quantitative findings by Zhang et al. (49) have also shown that Asian Americans experience a unique risk to violence. Based on their analysis of 12 years of data from the National Incident-Based Reporting System, they compared the nature of anti-Asian hate crimes from anti-Black and anti-Latinx hate crimes. The authors found that anti-Asian hate crimes were more likely than the hate crimes against Black and Latinx communities to be committed by POC perpetrators (49). They speculated resentment and animosity surrounding Asian American stereotypes to be possible reasons that Asian Americans are targeted. As such, consistent with our participants’ recommendations, offering support to Asian Americans means enlisting the help of all societal members, including Asian Americans, White Americans, and other communities of Color to learn about Asian American experiences of racism.

In short, our findings indicate that social support for Asian Americans victims of racism should not be assumed to be unequivocally beneficial. Well-intentioned support from loved ones can actually yield additional harm and distress. By designing a study that examined impact instead of the intent of social support, our findings suggest that Asian Americans may be wise in under-utilizing support as well as underreporting experiences of racist victimization. For example, Asian American under-reporting has been acknowledged in a number of contexts, from anti-Asian violence and hate crimes (50) to experiences of discrimination and isolation (51), economic hardship (52), and Asian American mental health needs (53, 54). The invisibility of anti-Asian violence is not new, and has been referred to as “the silent dilemma” due to public unawareness, apathy, and resistance toward recognizing hate crimes conducted against Asian Americans, as well as stereotypes of Asian Americans being a model minority (50). As such, rather than encouraging Asian Americans to speak out, speak up, or to ask for help, our research findings empirically demonstrate the unintended effects of

social support in which Asian Americans may experience additional harm and injury when seeking support from trusted, informal support networks. As such, rather than focus on Asian American coping as points of interventions, it is up to society to invest in the necessary resources to become better forms of social support for Asian American victims of racism.

Limitations and implications

This study is part of a larger investigation examining anti-Asian racism during COVID-19. As such, this paper emerged from a larger qualitative case study that was not designed to specifically examine the social support of Asian Americans. Additionally, we did not collect demographic data on gender, ethnic group, and generational status, which limits us from having a more nuanced understanding of our participants' experiences. Recent data from the Stop AAPI Hate advocacy report (31) found that 68% of the individuals reporting hate incidents identify as Chinese, Korean, or Filipinx. Additionally, one of the key findings in the report was that Asian Americans identifying as female, non-binary, LGBTQIA+ and older adults experienced hate incidents that targeted them for more than one of their identities at once. Thus, the intersections of sex, gender, sexual orientation, and age can be especially important for understanding the marginalization and risks of some Asian Americans subgroups. Our study was not able to account for analyses that address intersectionality because we did not collect these kinds of demographic information. Future research would benefit from asking these key demographics, as well as gathering background information such as education level, income level, and immigration status, particularly in understanding Asian American needs for social support.

Our study has important implications for providing social support for Asian Americans in response to racism. Beyond the concrete recommendations provided by our participants, mental health care providers can draw on these findings to provide affinity spaces for Asian Americans, such as group therapy. The benefits of technology and social media also allow for opportunities to facilitate a sense of community even in settings where there may be fewer Asian Americans and fewer cultural resources for Asian Americans. Administrators in school, community, organizational, and corporate settings can also benefit from recognizing the unique isolation that Asian Americans experience, and therefore, offer programs and initiatives that generate greater community and belonging for Asian Americans. Learning and supporting the experiences of Asian Americans must be a collective, societal effort rather than a responsibility placed on victims of racism and their immediate social support networks. For example, May is considered Asian American Pacific Islander heritage month, and it is a time when the country is supposed

to acknowledge, celebrate, and learn about Asian American history, media, politics, and leadership positions across different disciplines. Relatedly, the month of May is also mental health awareness month, and provides the opportunity to specifically recognize the culture-specific stigmas and barriers that impede as well as facilitate Asian American mental health needs as well as resilience. As evidenced in our participants' responses, it is critical to understand the intergenerational and racial trauma that Asian American families experience, given the long-standing marginalization of Asian Americans in U.S. history and presently. Supporting Asian Americans therefore requires support systems to be implemented at the societal and structural level, in the form of prevention and intervention services, and with urgency as well as recognition of the enduring nature of anti-Asian racism throughout this country's history.

Conclusion

Our study descriptively captures the types of inadequate social support received by Asian Americans during the first few months of the COVID-19 pandemic. While social support is, in theory, meant to be supportive, our findings showcased a range of injurious responses. Our findings add to the quantitative work that calls for more scholarship examining the nature and quality of social support. Additionally, our study highlights the need to understand the subjective experiences of those receiving support, so that research on social support can be defined by participants rather than by pre-determined definitions. Furthermore, social support must be understood as a collective responsibility, one that is implemented at the societal level when it comes to preventing, intervening, and supporting Asian Americans from anti-Asian racism.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Santa Clara University Institutional Review Board. The participants provided their written informed consent to participate in this study.

Author contributions

SCW: study design and data collection. SCW and BMCS: data analysis, manuscript writing, and intellectual content.

Both authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Acculturative stress, everyday racism, and mental health among a community sample of South Asians in Texas

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South Asian Americans are part of the fastest growing racial/ethnic group in the United States and make up a substantial portion of the U.S. immigrant population. Research on this group has often focused on acculturation, the adoption of different values and behaviors in a new sociocultural environment. While there is evidence to suggest that acculturation (and the stress associated with this process) has a negative effect on the health and well-being of Asian Americans, more recent research has emphasized the need to examine the role of broader social forces—including everyday racism—in impacting mental health. Drawing on the stress process model, this study uses an original survey instrument to investigate the relationships between acculturative stress, anti-Asian racism, and mental health among a community sample of 200 South Asians in Texas. Results from hierarchical multiple regression models indicate that both acculturative stress and everyday racism are strongly linked to higher levels of anxiety-related symptoms and more frequent depressive symptoms. Everyday racism, however, explained variance in these outcomes, well beyond the effect of acculturative stress and other sociodemographic factors. These results underscore the potential benefit and importance of including questions about racism in community health surveys that aim to study health disparities among Asian Americans and highlight the persistence of social issues that U.S. South Asians face.

KEYWORDS

Asian Americans, racism, acculturation, stress, mental health

Introduction

South Asian Americans are an ethnically, linguistically, and religiously diverse group of people whose ancestry ties back to the southern peninsular region of Asia, sometimes referred to as the Indian subcontinent. Recent trends reveal that South Asians are part of the fastest growing racial/ethnic group in America and—numbering at 5.4 million people—make up a substantial portion of the U.S. immigrant population (1). Although research has shown that immigrants who move to America tend to arrive with better health than native-born residents of similar socioeconomic profiles (2, 3), studies have documented that this “health advantage” erodes over time, possibly due to acculturation in U.S. society (4).

Acculturation refers to the process of minority groups adopting values, beliefs, and behaviors as a result of prolonged contact with the majority group (5). Acculturative stress, then, refers to the tension associated with making these changes and the pressure of adapting to a new socio-cultural environment (6, 7). This stress often includes difficulties with having to learn another language, struggling to balance different social values, and—in the context of this study—negotiating between American and South Asian ways of everyday life.

While there is evidence to suggest that acculturation (and the stress associated with this process) has a strong, negative effect on the health and well-being of foreign-born groups (8, 9), more recent research has emphasized the need to examine the role of *broader* social forces in impacting immigrants' health (10). Some scholars, for example, have argued that poor health among U.S. immigrants may have more to do with structural factors that disadvantage and increase the vulnerability of these communities (11, 12). One such factor is racism.

Operating at multiple levels, racism works to disempower and discriminate against people based on their racial or ethnic background and has been conceptualized as a key source of stress for those who are targeted (13). Multiple studies have shown that experiences with racism have harmful effects on the mental health of racial/ethnic minority groups and are related to participation in unhealthy behaviors as a way of coping with such encounters (14, 15). Although South Asians are viewed by some as being a “model minority” group and often rendered invisible in research on racism, they still face mistreatment based on their race or ethnicity (16, 17) and in some ways are hyper-visible targets. In 2017, for example, the non-profit group South Asian Americans Leading Together (SAALT) documented over 300 bias-related incidents against South Asians and Middle Easterners of multiple faiths (18). This number captured experiences of verbal abuse, harassment, and violence, and represented a 64% increase in bias-related incidents from the previous year. Some scholars have attributed this increase to heightened levels of Islamophobia in the U.S. (19), which have subjected South Asians—who are often perceived as being Muslim based on their physical appearance—to both surveillance and subjugation (20).

Given these occurrences, the recent rise in anti-Asian hate crimes (21), and immigration enforcement policies that have targeted foreign-born people who are studying in the U.S. (22), it is possible that both acculturative stress and racism may be linked to poor mental health among this rapidly-growing and increasingly stigmatized social group. This study, accordingly, examines the links between acculturative stress, everyday racism, and mental health among South Asians in the U.S.—contributing to both the race and immigrant health literatures—and sheds light on how various forms of social stress impact mental health.

Mental health refers to emotional, psychological, and social well-being and reflects the equilibrium between individuals and

the environment in which they live (23). Though this concept has garnered more attention in social-scientific research in recent decades, few studies have examined the relationship of mental health to acculturative stress and racism experienced among South Asian Americans. Prior research examining these stressors in *other* groups has found that racism is associated with heightened acculturative stress (24) and that these socio-cultural adversities are linked to worse mental health outcomes, including increased depressive symptoms and greater psychological distress (25, 26). To understand how stress from acculturation and everyday racism might impact the mental health of South Asians in the U.S., I draw on the stress process model.

The stress process model provides a useful theoretical framework for understanding mental health disparities. In this model, exposure to stress is linked to worse mental health, can manifest across different social contexts, and is related to one's status in society (27). In other words, this model suggests that health issues are not randomly distributed in the population but are rather a reflection of social and structural arrangements that systematically disadvantage racial/ethnic minority groups in the U.S. Because South Asians navigate their lives being seen by others as perpetual foreigners (28), some stressors, such as acculturation, may be more salient and associated with poor mental health. For example, prior research has shown that South Asian American adolescents experience stress from having to navigate multiple cultural contexts, which may inhibit their psychological well-being (29). Additionally, because of how South Asians are racialized in the U.S. (and vilified by actors in both the private and public spheres), it is plausible that racism is also linked to negative outcomes and may impact mental health, even after accounting for acculturative stress. By investigating the experiences of this population through a more nuanced lens, this study extends the work of previous scholars by examining how acculturative stress and everyday racism are tied to mental health among U.S. South Asians. Following the stress process model and building upon findings from previous research, this investigation addresses the following questions:

- 1) Is acculturative stress associated with the mental health of South Asian Americans?
- 2) Is everyday racism associated with the mental health of South Asian Americans?
- 3) Does everyday racism explain variance in mental health, beyond the effect of acculturative stress and other sociodemographic factors?

Methods

After receiving approval from the Institutional Review Board, participants were recruited from the South Asian population in two cities in Texas. This southwestern state is home to one of the largest South Asian populations in the U.S.

(30) and was also ranked #4 among states with the most anti-Asian incidents in the past year (31). Recruitment efforts focused on South Asian social networks (on WhatsApp, Facebook, and Twitter), university organizations geared toward South Asian members, houses of worship, and South Asian cultural centers. Similar to previous research on South Asian doctors' experiences with racism in the Texas medical field (32), this investigation invited community members living in the Austin and Houston metropolitan areas to take part in a study about their social experiences living as South Asians in the U.S.

Identifying as South Asian, myself, I recognize that my identity and experiences had some influence on what questions I chose to incorporate in my survey instrument, as well as on the recruitment process. For example, having negative encounters at the airport in the past (and knowing that these interactions happen to other South Asian people) informed my decision to include an item on the discrimination scale about mistreatment while traveling. Additionally, being a member of the target study population, I was able to use my position to gain access to South Asian participants, who may have otherwise been hesitant to participate in the study.

The sampling criteria included: having a South Asian / Desi background, being 18 years of age or older, having the ability to read in English, and residing in the state of Texas. Since research has shown that acculturation impacts South Asians across generations and in various ways (33), both South Asian immigrants and children of immigrants were eligible to participate. After obtaining informed consent, participants completed an online Qualtrics survey. Although it may have also been helpful to distribute the survey in person, I was unable to do so because of the COVID-19 pandemic. This is a limitation that I acknowledge and expand upon later.

Data were collected from June 2021 to October 2021. The analytic sample consisted of 200 participants. The sample size was determined by the generally accepted rule of $N \geq 50 + 8m$, where m is the number of independent variables (34). Since there were 13 independent variables in the study, a minimum of 154 cases ($50 + 8 \times 12 = 154$) were needed for a regression analysis.

Measures

Dependent variables

The main dependent variable for this investigation included two measures of mental health: depressive symptoms and anxiety-related symptoms. The measure of depressive symptoms was adapted from the Center for Epidemiologic Studies Depression Short Form (CES-D-10), which is a 10-item scale made for use with non-clinical samples, and assesses the frequency of current depressive symptoms (35). All items were incorporated into the survey, including: being bothered by things that usually are not bothersome, having trouble keeping one's mind on what they are doing, sleeping restlessly, having

poor appetite, feeling sad, feeling lonely, feeling depressed, feeling like everything took a lot of effort, feeling happy, and enjoying life. This scale measured depressive symptoms on a Likert-type scale ($1 = \text{never}$, $4 = \text{most or all of the time}$) and coded (or reverse-coded) items so that higher scores reflected higher frequency of depressive symptoms. Cronbach's alpha was 0.90, indicating high statistical reliability.

The measure of anxiety-related symptoms was adapted from the short-form of the State Trait Anxiety Inventory (STAI) developed by Spielberger (36), which is a reliable and valid form (37) consisting of 6 items that assesses the presence and absence of anxiety-related symptoms, including feeling: anxious, worried, nervous, comfortable, pleasant, and at ease. Participants were asked about how they often they felt certain emotions and responded to each of these items with "not at all" (coded as 1), "a little" (coded as 2), "somewhat" (coded as 3), or "very much so" (coded as 4). Items were coded (or reverse-coded) so that higher scores reflected higher levels of anxiety. Cronbach's alpha was 0.87, indicating high statistical reliability.

Independent variables

A key independent variable in this study was acculturative stress. Similar to previous research on acculturation, discrimination, and mental health among Asian populations (25), this variable was adapted from the National Latino and Asian American Study (NLAAS) and consisted of 7 items to which participants could respond "yes" or "no." The 7 items included: feeling guilty for leaving or being separated from family overseas, having difficulties interacting with others because of English nonproficiency, being treated badly because of speaking another language or speaking English with a South Asian accent, being concerned or questioned by others about one's legal status in the U.S., being concerned about running into trouble with immigration officials if one were to go to a government agency, avoiding seeking out healthcare due to fear of immigration officials, and whether life has become more difficult to navigate as an immigrant or child of immigrants in the U.S. A factor analysis was performed to examine the underlying structure of acculturative stress. All items except "avoiding seeking out healthcare due to fear of immigration officials" mapped on well to the scale. Scores ranged from 0 to 6, with higher scores reflecting higher levels of acculturative stress. Cronbach's alpha was 0.62, indicating moderately high statistical reliability.

Participants were also asked about experiences with everyday racism through the Everyday Discrimination Scale (38), a reliable and valid scale for assessing routine experiences with unequal treatment (39). Since this study focused on discrimination based on race/ethnicity, the items were modified to specifically account for events that occurred due to being South Asian. These items included: being treated with less

courtesy, being treated with less respect, receiving poorer service at restaurants or stores, having people acting as if they are afraid of you, having people acting as if they are better than you, being called names or insults, and being physically threatened or harassed. Based on research that shows that South Asian Americans, in particular, get treated differently when traveling (40) and seeking out social relationships online (41), I also added the following 3 items to the scale: being treated with less courtesy when traveling, having people ignore you in online forms of communication, and having people act as if they are disgusted by you. These items are unique in that they may be more salient for South Asians because of the way they are racialized in the U.S. Similar to acculturative stress, I performed a factor analysis for this variable. All items were used to develop the construct, which measured everyday racism on a Likert-type scale (1 = never, 6 = almost every day), with higher scores indicating higher levels of racism. Cronbach's alpha was 0.89, indicating high statistical reliability.

Sociodemographic variables

The sociodemographic variables in this study included: age, gender, ethnicity (Indian, Pakistani, Bangladeshi, or other), immigrant legal status (U.S. citizen, lawful permanent resident, or other, which included nonimmigrants on a temporary visa, undocumented immigrants, and refugees), educational attainment, English language proficiency (excellent, good, or fair), marital status, income, religious identity (Muslim, Hindu, Christian, or other), contact with a mental health therapist, and years lived in the U.S. These variables have been used in previous studies that examined the relationship between acculturative stress, discrimination, and mental health among communities of color (24, 25).

Analytic strategy

Stata/SE 16 was used to analyze data from the online survey. First, a descriptive analysis of sociodemographic variables was conducted and is presented in Table 1. Next, I examined the response distribution for each item on the scales, as well as bivariate analyses on the links between mental health symptoms and key independent variables, which can be found in the Supplementary materials. Finally, hierarchical multiple regression models were estimated to examine the relationships between acculturative stress, everyday racism, and mental health among South Asian respondents and presented in Tables 2, 3. This technique is useful for comparing different statistical models and can demonstrate if certain predictors explain a significant amount of variance in the outcome(s) of interest after accounting for all other variables (42). One strength of this

TABLE 1 Descriptive statistics.

Variables	% of sample
Age	
18–25 years	19.29
26–34 years	52.14
35–44 years	14.29
45–54 years	7.14
55 years or older	7.15
Gender	
Male	31.42
Female	68.57
Education	
High school or less	2.86
Some college/Associate's degree	9.57
Bachelor's degree	31.43
Graduate degree	56.43
Income	
\$0–\$24,999	8.43
\$25,000–\$49,999	11.57
\$50,000–\$74,999	15.71
\$75,000–\$99,999	12.14
\$100,000+	53.57
Ethnicity	
Bangladeshi	13.44
Indian	36.82
Pakistani	49.75
English proficiency	
Fair or good	13.43
Excellent	86.43
Religious identity	
Muslim	72.59
Christian	9.64
Hindu	8.63
Other	9.14
Legal status	
U.S. citizen	83.42
Lawful permanent resident	6.22
Other	10.36
Seeing a therapist	
No	96.63
Yes	3.37
Mean (SD)	
Years in the U.S.	24.52 (9.28)
Key independent variables	
Acculturative stress	0.2471 (0.2333)
Everyday racism	0.3218 (0.1789)
Dependent variables	
Anxiety-related symptoms	0.3685 (0.2376)
Depressive symptoms	0.2946 (0.2443)

TABLE 2 Hierarchical multiple regression models predicting anxiety-related symptoms ($n = 200$).

Independent variables	Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE
Age (ref: 18–15 years)						
26–34 years	−0.0477	0.0575	−0.0315	0.0562	−0.0220	0.0553
35–44 years	−0.0869	0.0750	−0.0677	0.0733	−0.0621	0.0721
45–54 years	−0.2025*	0.0810	−0.1815*	0.0792	−0.1726*	0.0779
55 years or older	−0.2193*	0.0963	−0.1920*	0.0942	−0.1680	0.0940
Gender (ref: Male)						
Female	0.0291	0.0396	0.0382	0.0388	0.0395	0.0381
Education (ref: Graduate degree)						
High school or less	−0.0761	0.0940	−0.0844	0.0916	−0.0745	0.0902
Some college/Associate's degree	0.0162	0.0722	−0.0097	0.0704	−0.0063	0.0691
Bachelor's degree	−0.0207	0.0431	0.0037	0.0426	0.0073	0.0421
Income (ref: \$100,000+)						
\$0–\$24,999	0.0601	0.0720	0.0684	0.0710	0.0891	0.0702
\$25,000–\$49,999	0.0353	0.0762	0.0498	0.0747	0.0686	0.0738
\$50,000–\$74,999	0.0142	0.0526	−0.0092	0.0518	−0.0004	0.0511
\$75,000–\$99,999	0.0117	0.0535	0.0138	0.0523	0.0201	0.0517
Years in the U.S.	0.0010	0.0028	0.0002	0.0027	−0.0006	0.0027
Ethnicity (ref: Pakistani)						
Bangladeshi	0.0241	0.0664	−0.0030	0.0659	−0.0165	0.0680
Indian	0.1472**	0.0526	0.1208*	0.0520	0.1184*	0.0510
English proficiency (ref: Excellent)						
Fair or good	−0.0315	0.0532	−0.0518	0.0522	−0.0605	0.0515
Religious identity (ref: Muslim)						
Christian	−0.0861	0.0806	−0.0490	0.0794	−0.0337	0.0781
Hindu	−0.1671*	0.0770	−0.1493*	0.0752	−0.1309	0.0744
Other	−0.1832*	0.0710	−0.1744*	0.0692	−0.1719*	0.0683
Legal Status (ref: U.S.-born Citizen)						
Lawful permanent resident	−0.0422	0.0845	−0.0869	0.0843	−0.0569	0.0839
Other non-U.S. citizen	−0.0165	0.0823	−0.0818	0.0829	−0.0624	0.0827
Seeing Therapist (ref: No)						
Yes	0.0476	0.0604	0.0516	0.0589	0.0559	0.0578
Acculturative stress			0.2196**	0.0792	0.1215	0.0877
Everyday racism					0.2750*	0.1069
R^2	0.193		0.239*		0.276**	
ΔR^2 from previous model			0.046*		0.037**	

* $p < 0.05$, ** $p < 0.01$.

approach is that the researcher can select the order in which the variables are entered, based on a theoretical rationale and/or their research questions (43). Hierarchical multiple regression models have been used in other studies that examine acculturation, discrimination, and/or mental health (25, 44, 45)—and in the context of this investigation—can reveal if everyday racism explains variance in depressive or anxiety-related symptoms, above and beyond the effect of acculturative stress.

Results

Table 1 shows the distributions of sociodemographic factors among the community sample of South Asians in Texas.

According to Table 1, the majority of the respondents (52.14%) fell between the ages of 26 and 34 years old. Most respondents (68.57%) also identified as female. Regarding educational attainment, 2.86% had a high school diploma, 7.86% finished some college, 31.43% had a bachelor's degree, and

TABLE 3 Hierarchical multiple regression models predicting depressive symptoms ($n = 200$).

Independent variables	Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE
Age (ref: 18–15 years)						
26–34 years	−0.0015	0.0594	0.0090	0.0592	0.0216	0.0570
35–44 years	−0.0381	0.0775	−0.0230	0.0774	−0.0146	0.0741
45–54 years	−0.1407	0.0839	−0.1274	0.0836	−0.1153	0.0802
55 years or older	−0.1913	0.0987	−0.1709	0.0986	−0.1368	0.0958
Gender (ref: Male)						
Female	0.0384	0.0410	0.0431	0.0409	0.0450	0.0392
Education (ref: Graduate degree)						
High school or less	−0.0073	0.0976	−0.0146	0.0970	0.0000	0.0932
Some college/Associate's degree	0.0598	0.0759	0.0628	0.0754	0.0678	0.0722
Bachelor's degree	−0.0229	0.0443	−0.0082	0.0445	−0.0034	0.0429
Income (ref: \$100,000+)						
\$0–\$24,999	0.0380	0.0749	0.0411	0.0753	0.0718	0.0726
\$25,000–\$49,999	0.0619	0.0809	0.0702	0.0808	0.0971	0.0779
\$50,000–\$74,999	0.0311	0.0548	0.0167	0.0550	0.0298	0.0529
\$75,000–\$99,999	0.0521	0.0546	0.0542	0.0546	0.0649	0.0526
Years in the U.S.						
	0.0002	0.0029	−0.0003	0.0029	−0.0015	0.0028
Ethnicity (ref: Pakistani)						
Bangladeshi	0.1507*	0.0689	0.1332	0.0698	0.1100	0.0704
Indian	0.1606**	0.0545	0.1417*	0.0550	0.1379*	0.0527
English proficiency (ref: Excellent)						
Fair or good	0.0179	0.0542	0.0053	0.0543	−0.0067	0.0522
Religious identity (ref: Muslim)						
Christian	−0.0683	0.0838	−0.0414	0.0842	−0.0198	0.0809
Hindu	−0.1711*	0.0812	−0.1626*	0.0808	−0.1360	0.0780
Other	−0.0927	0.0725	−0.0844	0.0721	−0.0833	0.0694
Legal Status (ref: U.S.-born Citizen)						
Lawful permanent resident	−0.0365	0.0881	−0.0685	0.0895	−0.0246	0.0869
Other non-U.S. citizen	−0.0933	0.0829	−0.1335	0.0850	−0.1028	0.0829
Seeing Therapist (ref: No)						
Yes	0.1120	0.0616	0.1178*	0.0570	0.1229*	0.0586
Acculturative stress						
			0.1545*	0.0835	0.0109	0.0902
Everyday racism						
					0.4033***	0.1106
R^2	0.219		0.239*		0.309**	
ΔR^2 from previous model			0.020*		0.070**	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

56.43% completed a graduate or advanced degree. With respect to income, 15% of the sample earned \$49,999 or less. 53.57%, on the other end, earned over \$100,000 per year. 86.43% of the sample had excellent proficiency in English, while 11.43% reported fair or good proficiency. Regarding marital status, 52.14% of the sample was married, 3.57% was divorced or separated, and 44.29% had never married. The overwhelming majority of the sample (83.42%) identified as U.S. citizens. 6.22% were lawful permanent residents, and 10.36% had another legal status. When asked about contact with a mental health

provider, only 10.95% of respondents were seeing a therapist, while 89.05% were not. The mean scores of acculturative stress and everyday racism were 0.2471 ($SD = 0.2333$) and 0.3218 ($SD = 0.1789$), respectively. Interestingly, there were two items on the everyday racism scale that occurred “often” by about one in five participants. One of these items was being treated with less courtesy while traveling (17.30%). Findings from the hierarchical multiple regression models examining acculturative stress, everyday racism, and anxiety-related symptoms are reported below in Table 2.

Table 2 shows results from hierarchical multiple regression models predicting anxiety-related symptoms among South Asian respondents. The results display regression coefficients (β), which represent the mean change in anxiety-related symptoms for one unit of change in the predictor variable, holding all other variables constant. When estimating hierarchical multiple regression models, the variables are entered in distinct blocks or steps (46). In the initial model ("Step 1"), I included sociodemographic control variables only. In the second model ("Step 2"), I introduced acculturative stress. Then, in the last model ("Step 3"), I added everyday racism to see if this variable played a significant contribution in explaining additional variance in mental health, well beyond what was already included in the previous models.

Results from Step 2 showed that for each unit increase in acculturative stress, a 0.2196 unit increase in anxiety-related symptoms was predicted, holding all other variables constant ($p < 0.01$). R^2 increased significantly from 0.193 to 0.239 ($p < 0.05$), suggesting that acculturative stress played an important role in explaining variance in anxiety. Furthermore, in Step 3, results showed that for each unit increase in everyday racism, a 0.2750 unit increase in anxiety-related symptoms was predicted ($p < 0.05$). When everyday racism was added to the model, the effect of acculturative stress on anxiety-related symptoms also diminished. In this final step, R^2 increased significantly from 0.239 in Model 2 to 0.276 in Model 3 ($p < 0.01$), highlighting the unique contribution of everyday racism in explaining variance in anxiety-related symptoms, even beyond the effect of acculturative stress. A similar step-wise process was conducted in Table 3, which examined acculturative stress, everyday racism, and depressive symptoms among South Asian respondents.

Step 1 in Table 3 included sociodemographic controls. Acculturative stress was added in Step 2. In this step, results showed that for each unit increase in acculturative stress, a 0.1545 unit increase in depressive symptoms was predicted, holding all other variables constant ($p < 0.05$). R^2 increased significantly from 0.219 to 0.239 ($p < 0.05$), suggesting that acculturative stress played an important role in explaining variance in depression. Lastly, in Step 3, everyday racism was incorporated. Results showed that for each unit increase in everyday racism, a 0.4033 unit increase in depressive symptoms was predicted ($p < 0.001$). Similar to before, when racism was added to the model, the effect of acculturative stress diminished. In this final step, R^2 increased significantly from 0.239 to 0.309 ($p < 0.001$), once again underscoring the unique contribution of everyday racism in explaining variance in this second measure of mental health.

Discussion

This study, to my knowledge, is one of the first to examine various measures of mental health among South Asian

Americans and their relation to both acculturative stress and everyday racism. Although a large body of work has examined the role of acculturation in contributing to health issues among immigrants (47–49), limited research has investigated this process (in conjunction with racism) among this increasingly racialized and rapidly-growing group. Studying both factors is important for understanding how multiple stressors can impact immigrant communities as they navigate various socio-cultural contexts. As a result, this investigation contributes to the literature by advancing knowledge on South Asian Americans' social experiences (including perceptions of anti-Asian racism) and their relation to mental health.

Prior studies have shown that acculturative stress is linked to mental health issues among Latin American immigrants in international contexts (50), as well as other Asian populations in the U.S. (51–53). Scholars have also found that discrimination is associated with worse emotional well-being among Gujarati Americans (54) and depression among U.S. South Asians more generally (55). In line with this research, I found that acculturative stress and everyday racism were strongly linked to higher levels of anxiety-related symptoms and more frequent depressive symptoms among South Asians in Texas. Importantly, however, everyday racism explained variance in these mental health outcomes, well beyond the effect of acculturative stress. This result is congruent with existing literature, which shows that while acculturation and discrimination both have a negative impact on health, discrimination can have a unique and relatively stronger effect (25, 56).

My findings underscore the potential benefit and importance of including questions about racism in local health surveys (which are often missing), especially those targeted toward communities of color. For example, one of the unique characteristics about the survey used in this study is that it contained specific questions about racism that may be more salient for South Asians. As the results from supplementary analyses showed, some of these encounters (e.g., experiencing discrimination while traveling) occurred often in almost a fifth of the sample. Theoretically, the results also challenge the model minority myth by highlighting the persistence of social issues that South Asians experience, which can serve as a major source of stress and contribute to health disparities.

These findings, however, should be interpreted in light of several limitations. First, participants were recruited from only two cities in Texas. It is possible that because South Asians may be more concentrated in large urban areas, their social experiences may differ from those who live in smaller rural towns. This study, however, was not able to take into account geographic variation across settings. Second, responses were based on self-report measures that relied on retrospective collections of particular social encounters. As a result, it is possible that respondents may underestimate or overestimate their experiences with everyday racism. Third, the study's

survey was administered in English, and due to the COVID-19 pandemic, its format was online-only. Consequently, I was not able to reach participants who may not be able to read in English or do not have regular access to the Internet. This gap may have impacted the findings, especially if South Asians who did not receive formal education in English and/or come from low-income backgrounds may be impacted more by acculturative stress and everyday racism but were not well-represented in the study. Fourth, while certain kinds of social/professional support were included in the survey, it is possible that there are other important factors, such as community networks (and ties within these networks), that were not incorporated but may also be relevant to mental health. Fifth, results reported from the models were associations, so I am not able to make causal claims using this data. To understand causal relationships, a different type of dataset and analytic strategy would be needed. Lastly, due to the small, majority-Pakistani, and majority-female sample, findings may not be generalizable to the South Asian population in the U.S., which is majority-Indian and consists of slightly more men than women (57).

These limitations point to several avenues for future research. First, studies might examine South Asians' experiences with acculturation and racism in different parts of America, which may yield different outcomes for mental health, depending on this group's social and neighborhood contexts. Second, future research may consider studying the social experiences of South Asians using longitudinal data, such as through daily diaries, which may highlight the effects of racism in real-time and capture any period effects where insults to mental health may be more pronounced. Third, capturing attributions to discrimination would provide more data on why people believe they are being treated unequally. This information would be useful for studying South Asian participants, who may be targeted for reasons beyond race/ethnicity, such as their perceived faith. Fourth, translating surveys into multiple South Asian languages and making the surveys available to complete in person as well as online would have greater reach and could potentially recruit more participants. With these larger sample sizes, studies could investigate how various structures of inequality (e.g., racism, sexism, xenophobia, etc.) intersect to shape health outcomes among South Asians on a broader scale. Lastly, future research might consider studying South Asian Americans in comparison to other immigrant groups, such as communities from Latin America. Doing so may provide empirical insights on how the social experiences of one racialized group shape (and are shaped by) the experiences of another.

In conclusion, this investigation enhances knowledge on the relationship between acculturative stress, everyday racism, and mental health, using a community sample of South Asians in Texas. The results of the study yield multiple implications. First, the findings suggest that when researching immigrant health, it is important to focus not only on acculturation,

but to also consider the impact of broader social forces, such as racism. Studying acculturation, alone—which places the responsibility for poor mental health on immigrants—can lead to deficit perspectives (e.g., thinking that immigrants experience negative outcomes because they “lack” the ability to integrate). By shifting attention to more external factors and acknowledging the potential harm that discrimination can cause, it may be possible to identify tactics, such as anti-racist policies, that can reduce discrimination and/or mitigate its effect on health. Knowledge of these strategies could be relevant to stakeholders and policymakers who are working to address acts of xenophobia and anti-Asian racism on a local level. The results also yield implications for mental health providers to address the psychological needs of patients from this community, which may parallel the needs of those from other immigrant groups. Being familiar with the impact of acculturative stress and everyday racism, for example, may help providers identify interventions that can help individuals cope with these problems. Before that, however, scholars may need to continue disaggregating data on Asian Americans to uncover different experiences within this diverse population and determine which groups may be disproportionately impacted by various health issues. By the studying the social experiences of South Asians and other marginalized groups through a more nuanced lens, public health officials, researchers, and practitioners will have a better understanding of how various forms of social stress impact minority health.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by University of Texas at Austin Institutional Review Board. The participants provided their written informed consent to participate in this study.

Author contributions

The author confirms being the sole contributor of this work and has approved it for publication.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.954105/full#supplementary-material>

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Congruence and discrepancy in Asian American women's perception and stress appraisal of gendered racial microaggressions: Relationships with depressive symptoms and internalized racism

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Prior research demonstrates significant links between discrimination and mental health by assessing either encounters with or stress appraisal of discrimination. However, research has yet to examine the dynamic interplay between frequency and stress appraisal (e.g., high frequency-low stress appraisal) and their linkage to depressive symptoms. Using a sample of 309 Asian American women ($M_{age} = 22.81$, $SD = 0.26$), we used a polynomial regression and response surface analysis to model the congruence and discrepancy between frequency and stress appraisal of gendered racial microaggressions experienced by Asian American women and how they are related to depressive symptoms and internalized racism. The dynamics between frequency and stress in relation to depressive symptoms were further probed at low, mean, and high levels of internalized racism. Greater congruence between frequency and stress was significantly associated with depressive symptoms (medium to large effect) and internalized racism (small effect). A discrepancy between higher frequency and lower stress was significantly associated with greater internalized racism. Further, when looking across levels of internalized racism, greater congruence between frequency and stress was significantly associated with greater depressive symptoms at low and mean levels of internalized racism but not at high levels. Gendered racial microaggressions are associated with adverse mental health outcomes among Asian American women, contributing to greater depressive symptoms and internalized racism. Further consideration should be given toward how internalized racism shapes differences in the perceptions and stress appraisal of gendered racial microaggressions, and subsequent mental health outcomes among Asian American women.

KEYWORDS

Asian American women, gendered racism, internalized racism, depressive symptoms, response surface analysis, gendered racial microaggressions

Introduction

The 2021 Atlanta spa shootings and the ongoing attacks and murders of Asian American women [AAW; (1)] are hate crimes that must be contextualized within the dominant sexist and racist narratives about AAW in the United States. Based on the intersectionality framework, which views multiple social identities (e.g., race, gender, class, etc.) within the context of interlocking systems of oppression that uniquely effect marginalized groups' experiences (2) and the concept of gendered racism, which examines experiences of oppression at the intersection of gender and race (3), gendered racial microaggressions (GRM) highlight the oppression that Asian American women experience within the context of the long standing gendered racial stereotypes of AAW as submissive, fetishized, invisible, and domesticated women (4). In particular, these stereotypes have historically rendered AAW as subservient objects of sexual fetishization ("yellow fever") among White men (5, 6) and have placed them at great risk for potential sexual and dating violence, as well as physical assault. Given the pernicious and chronic manifestation of microaggressions in the daily lives of racial minority individuals, emerging literature suggests that GRM is linked to a host of mental health issues including depressive symptoms and suicide ideation among AAW (4, 7).

Suicide remains one of the leading causes of death among Asian American women (AAW), particularly AAW in their late adolescence and emerging adulthood [ages 15–24; (8)]. As the alarming statistics on suicide deaths among AAW continue to persist, it is imperative to examine the dynamics between GRM and depressive symptoms, a major risk factor related to suicide. One major question is how the frequency, or perceived number of GRM and stress appraisal of GRM events may play a role in developing depressive symptoms. For some AAW, they may perceive few instances of GRM but appraise them to be extremely stressful when they do occur. On the other hand, some AAW may perceive a lot of GRM, but how much stress is experienced may be complex and subdued, especially if they harbor high levels of internalized racism that pushes them to survive through these oppressive dynamics by appropriating toward the oppressors' expectations and stereotypes (9, 10). Thus, the interplay between the frequency or perceived number of GRM and the level of stress appraised merits examination of their linkage to depressive symptoms and internalized racism. This dynamic is important to examine as it can provide a nuanced understanding of how factors such as internalized racism can contextualize the varied impacts of GRM on depressive symptoms among AAW. Thus, the aim of this study was to examine the congruence and discrepancy between frequency and stress appraisal of GRM experienced by AAW and how they are related to depressive symptoms and internalized racism.

Frequency and stress appraisal of gendered racial microaggressions

A growing body of evidence links the experience of GRM, subtle everyday instances of discrimination that denigrate individuals based on their intersecting gender and racial identities, with negative mental health outcomes such as depressive symptoms (4, 7, 11, 12). Mukkamala and Suyemoto (13) used a multimethod qualitative approach to capture the overlapping oppressions that AAW experience, highlighting themes of being seen as exotic, not a leader, submissive and passive, cute and small, invisible, and as a service worker. In efforts to advance quantitative research on the unique stressors impacting the mental health of AAW, Keum et al. (4) operationalized GRM among AAW into four key domains: (a) Ascribed Submissiveness; (b) Assumption of Universal Appearance; (c) Asian Fetishism and; (d) Media Invalidation, finding GRM to contribute unique risk to depressive symptoms above and beyond general experiences of sexism and racial microaggressions among a sample of AAW. These findings align with prior work that draws from the stress and coping model, conceptualizing racial discrimination to adversely impact health when the perceived stressors from discrimination exceeds available personal and social coping resources (14–16).

Research that draws from the stress and coping model to examine the link between racial discrimination and health among Asian Americans often assesses the presence or absence of discriminatory events, which assumes a greater frequency of reported discrimination leads to greater stress and worse health (17, 18). The Everyday Discrimination Scale (EDS; 14), a measure that is often employed in public health research, uses a nine-item scale to capture chronic and routine instances of unfair treatment (e.g., treated with less respect, called names or insulted) (19). Despite having strong psychometric properties (20, 21), the EDS remains limited in its ability to appraise the stressfulness of the chronic instances of unfair treatment (22). Alternatively, measures like the General Ethnic Discrimination Scale [GED; (18)] examine dimensions of chronicity and stress by asking respondents how often they encountered racial discrimination in the past year and over their lifetime, as well as how stressful the encounter was (18). While the two ratings allow for the evaluation of the frequency and stress of a particular racial discrimination event, studies have yet to examine the concurrent interplay between the two dimensions. According to the stress response framework of racism's impact, as a racial minority individual encounters a certain level of racism in their daily lives, how much stress is derived from these experiences on an ongoing basis would be important to understand regarding implications of psychopathology. Thus, a more dynamic understanding of encounters with GRM and their perceived stressfulness is needed to illuminate differences in the stress appraisal process for Asian

American women exposed to GRM; specifically, why some AAW may find GRM experiences such as AAW fetishization to be very stressful, whereas other AAW may experience very little stress.

Congruence and discrepancy in perception and stress appraisal of gendered racial microaggressions

For AAW who experience GRM, there are several factors that may vary their perceptions of GRM events and differentiate their stress appraisal. In particular, research has indicated that factors such as nativity status, generational status, and years in the U.S. can shape how individuals perceive discrimination. For example, in a study that examined experiences of perceived discrimination and wellbeing among a sample of U.S.-raised Asian students (born in the U.S., spent more than half their age in the U.S., or moved to the U.S. before age 12) and non-U.S.-raised Asian students (Asian students born or raised outside of the U.S.), findings indicate that U.S.-raised students reported greater degrees of acculturation and significantly higher scores on perceived discrimination compared to non-U.S. raised students (23). The acculturation process for many Asian Americans provide a way to cope with their perceived differences as they navigate White cultural norms that are often associated with being American (23, 24). Unfortunately, much of this process involves exposure to various forms of U.S. racism and discrimination embedded within mainstream American culture that can negatively impact the mental health of more acculturated Asian Americans who are accustomed to identifying and understanding the implications of their encounters with racism (25, 26). Indeed, research indicates that U.S.-raised Asian students experiencing racial discrimination report more depressive symptoms, less life satisfaction, and lower self-esteem mediated through denial of their American identity (27). Hence, AAW raised in the U.S. may be more attuned to experiences of GRM as discriminatory, such that increases in exposure to GRM are linked to a congruent increase in their stress response, which can lead to worse mental health.

However, few studies have examined factors that may shape discrepant experiences between discrimination and stress appraisal. Specifically, some AAW may encounter a lot of GRM, yet experience very little or no stress in response to these incidents. Conversely, for some AAW, these same encounters with GRM may be very stressful for them. Thus, AAW's stress response depends on how they perceive GRM, which can vary depending on their level of awareness of GRM as well as their ability to cope. There is some research to suggest that color-blind racial attitudes, the belief that race or racism should not matter, can shape how Asian Americans perceive

racial dynamics and the existence of racism in the U.S. (28). For instance, first and 1.5 generation Asian Americans have been found to have limited awareness regarding instances of blatant racism (29). These findings are consistent with research among non-U.S.-raised who report higher scores on racial color blindness (23). Further, there is evidence that non-U.S.-raised Asian individuals who perceive foreigner objectification (e.g., perpetual foreigner stereotype) do not experience the same associations with depressive symptoms, low life satisfaction, and low self-esteem as their counterparts (27). Some scholars have suggested that color-blind racial attitudes among Asian Americans that were not raised in the U.S. may relate to coming from a more homogenous culture where racial/ethnic identity holds less relevance, and they are yet to be socialized or become critically conscious of the racial dynamics in the U.S. (29, 30). Further, they may experience a process of enculturation where they work to maintain the values and norms of their culture of origin as they navigate American culture (31). However, color-blind racial attitudes may still be common among Asian Americans who are second generation or beyond, suggesting more complex processes that may be tied to internalized racism among Asian Americans who are deeply embedded in mainstream American culture and U.S. racism (29). Despite the importance of examining the role of internalized racism in influencing the mental health of Asian Americans, few studies have explored the significance of internalized racism among AAW. Thus, this study seeks to elucidate the role of internalized racism among AAW, particularly how it may influence discrepancies experienced between the perceived number of GRM encounters and stress appraisal.

Internalized racism and gendered racial microaggressions

A growing body of research among Asian Americans demonstrates a link between internalized racial oppression and adverse mental health outcomes, such as increased depressive symptoms and psychological distress (9, 32, 33). Briefly, internalized racial oppression can be understood as the conscious or unconscious adoption of racist stereotypes, ideologies, and values perpetuated by the White dominant society about racial/ethnic minorities, and can manifest through self-hatred, low self-worth, and the acceptance of negative or positive stereotypes of one's self or racial group (32–34). Scholars have argued that internalized racial oppression is better conceptualized and termed appropriated racial oppression, as it shifts the attention away from emphasizing internal factors to focusing on oppression as systemic (9, 10). As such, individuals are not limited to passively accepting the negative messaging associated with one's racial group but may use various “tools of

oppression” to adapt and respond to normative Whiteness (e.g., assimilation, code-switching) (10, 33).

Accordingly, AAW who encounter GRM and experience internalized racial oppression may engage in the stress appraisal process in different ways. Internalized racial oppression among Asian Americans have been operationalized by Choi et al. (32) to include three general and gendered dimensions that include: (a) self-negativity, (b) weakness stereotype, and (c) appearance bias. Self-negativity may be especially detrimental for Asian Americans that express negative attitudes, low collective self-esteem, and an overall devaluation of one’s own Asian American identity. Indeed, there is research to suggest a direct link between internalized racial oppression and depressive symptoms (9, 35). Further, recent research shows high levels of internalized racial inferiority exacerbate the link between racial/ethnic discrimination and psychological distress among Asian American adults (36). Hence, for some AAW, internalized racial oppression may reinforce their experience of self-negativity, particularly those who endorse negative messaging related to GRM, which may exacerbate depressive symptoms. Alternatively, there are AAW who may find ways to downplay, deny, and even justify their experiences of GRM, endorsing assumptions of their submissiveness and exoticization, and may not view GRM as discriminatory (33). A recent review of internalized racism and health among racial/ethnic minorities indicates that internalized racism can manifest in complex ways that can contribute to worse health while also serving as a self-protective strategy (34). Thus, Asian American women who appropriate negative messaging from GRM may choose to “play along” with the oppressive values perpetuated by White dominant society as a survival strategy to avoid feeling more stressed or down about themselves. Therefore, the perception and stress appraisal of GRM events may be affected by varying levels of internalized racial oppression among AAW, which may have implications for the development of mental health issues such as depressive symptoms.

The present study

Our review of the literature suggests that there may be congruence or discrepancy between the frequency, or perceived number of GRM AAW encounter, and the intensity of stress appraised from these encounters. Examining this process is important as it can provide greater nuance into the mechanism of how GRM may impact AAW’s mental health. As reviewed, the dynamic between how one encounters discrimination and subsequently experiences stress can be influenced by many social and cognitive factors, such as internalized racism. To address this gap in the literature, we examined whether the degree of congruence and discrepancy between frequency and stress appraisal of GRM among AAW would be associated with their depressive symptoms and internalized racism. We defined

congruence and discrepancy as agreement and disagreement between (a) the frequency or perceived number of GRM encountered, and (b) the level of stress experienced from GRM. We employed a polynomial regression and response surface analysis [PRRSA; (37)] to test our hypotheses. PRRSA allows simultaneous modeling of (x) and (y) predictors scored on the same items (in this case, the GRM items rated for both frequency and stress appraisal) with the outcome variable (z; in this case, depressive symptoms and internalized racism), which overcomes the limitations of difference scores. PRRSA has been commonly used to test the congruence and discrepancy of social psychological constructs (38). The following were our hypotheses:

Hypothesis 1

We first examined how the congruence and discrepancy between GRM frequency and stress appraisal are related to depressive symptoms. We hypothesized that greater congruence (e.g., more GRM encountered being congruent with more stress experienced) would be significantly related to higher depressive symptoms. In other words, AAW who encounter and experience greater levels of GRM and its associated stress would report significantly higher depressive symptoms.

For discrepancy, we examined two trends: (a) AAW who report low GRM frequency but high stress, and (b) AAW who report high GRM frequency but low stress. We hypothesized that AAW would be more likely to report significant depressive symptoms with the former discrepancy than the latter given that the stress stemming from GRM would be a likely agent that impacts their mental health. Even if AAW encounter infrequent GRM, if they experience a high level of stress, the impact on their mental health may be significant. If AAW encounter frequent GRM but reports little stress, there may be less impact on their mental health.

Hypothesis 2

Regarding internalized racism as the outcome variable, we examined whether the discrepancy between GRM frequency and stress appraisal is related to internalized racism. We hypothesized that the high frequency-low stress discrepancy would be significantly associated with higher internalized racism than the low frequency-high stress situation. Based on our review, for AAW with a high level of internalized racism, they may be less aware and attuned to recognizing the harmful costs of GRM [e.g., (33)]. Alternatively, AAW may have adapted to forms of normative Whiteness, where they find ways to actively engage with the negative messaging associated with GRM and find a way to use it to their advantage, thereby limiting GRM from contributing to more stress (10, 33).

For congruence, our analysis was exploratory. On one hand, we anticipated that lower congruence (e.g., less GRM

encountered being associated with less stress experienced) may be significantly related to higher internalized racism. Based on the evidence and theory that those with high internalized racism may be less attuned to recognition of GRM and may even deny the harmful costs of GRM, or that AAW has found a way to actively engage in the negative messaging associated with GRM to use it to their advantage to minimize the stress they may otherwise experience, AAW who perceive lower levels of GRM and its associated stress may be associated with higher internalized racism. On the other hand, it is also possible that greater congruence (e.g., more perceived GRM being congruent with more stress experienced) would be significantly related to higher internalized racism as more experiences with GRM may push AAW to internalize negative messages about their Asian identity.

Hypothesis 3

Subsequently, we examined how the congruence and discrepancy between GRM frequency and stress appraisal are related to depressive symptoms across low (-1 SD), mean, and high ($+1$ SD) levels of internalized racism. At low and mean internalized racism levels, we hypothesized that greater congruence would be significantly related to higher depressive symptoms but not for those with high internalized racism. For discrepancy, we hypothesized that low frequency-high stress discrepancy would be significantly related to depressive symptoms (vs. high frequency-low stress) at low and mean levels. At a high level of internalized racism, we hypothesized that neither congruence nor discrepancy may be significantly associated with depressive symptoms.

Methods

Participants and procedure

The current sample was a subset of data from a previous study (Authors anonymous) that was conducted in compliance with the Institutional Review Board. The inclusion criteria were: (a) 18 years old or older and (b) currently enrolled in an APA-accredited doctoral program in counseling psychology (incoming students or alumni were ineligible). Data was collected *via* an online survey consisting of informed consent, study variable measures, and demographic items hosted by Qualtrics. The survey was advertised through multiple online communication platforms such as listservs, discussion forums, and social network sites (e.g., Facebook) pertaining to Asian American women.

Participants were 309 adult Asian American women ranging from 18 to 68 years old ($M = 22.81$, $SD = 6.26$). The majority

(99%) identified as a cisgender woman, and the remaining participant identified as Genderfluid. About 83% identified as heterosexual, 7% bisexual, 4% uncertain or questioning, 2% Queer, 2% Asexual, 1% Lesbian, and 1% Other. The sample was diverse in ethnicity: Chinese (29%), Korean (16%), Indian (10%), Vietnamese (7%), Taiwanese (7%), Filipina (6%), Japanese (2%), and 17% Multiracial. The remaining 6% identified as Native Hawaiian/Pacific Islander, Cambodian, Thai, Hmong, Laotian, Bangladeshi, and Indonesian. Majority (74%) identified as second generation and beyond, while the remaining participants (36%) identified as 1st or 1.5 generation. In terms of education, majority (69%) had some college or earned a college degree, 20% earned a graduate (e.g., Master's) or professional degree (e.g., MD), and 11% had high school diploma. The majority of the sample (51%) identified as middle class, followed by upper-middle class (27%), working class (16%), lower class (4%), and upper class (2%).

Measures

Gendered racial microaggressions stress

The Gendered Racial Microaggressions Scale for Asian American Women [GRMSAAW; (4)] is a 22-item scale that assesses the behavioral, verbal, and environmental manifestations of GRM experienced by AAW in the United States. The four subscales are: (a) Ascribed Submissiveness; microaggressions rooted in submissive stereotypes and assumptions of AAW, (b) Assumption of Universal Appearance; stereotypes and assumptions that minimize and confine all AAW's body image and appearance attributes to certain "Asianized" standards, (c) Asian Fetishism; sexual objectification and fetish (e.g., yellow fever), and (d) Media Invalidiation; underrepresentation and negative stereotypical portrayals in the media. The general factor (total score) represented unique shared variance across all items. We used the frequency (0 = *Never*, 1 = *Rarely*, 2 = *Sometimes*, 3 = *Often*, 4 = *Very frequently*, 5 = *Always*) and stress appraisal (0 = *not at all stressful*, 1 = *Slightly stressful*, 3 = *Moderately stressful*, 4 = *Very stressful*, 5 = *Extremely stressful*) total scale scores (GRMS). Higher frequency scores indicate greater amounts of GRM experienced and higher stress scores greater stress experienced from GRM. Sample items include "Others express sexual interest in me because of my Asian appearance," and "I rarely see AAW in the media." Keum et al. (4) reported good internal consistency with Cronbach's alphas ranging from 0.86 to 0.94 for stress appraisal. Construct validity was supported by associations with racial microaggressions, sexism, depression, and internalized racism scores (4). The total score internal consistency for the current study was 0.91 and 0.91 for frequency and stress.

Depressive symptoms

Patient Health Questionnaire-9 [PHQ-9; (39)] is a 9-item depression scale that establishes provisional depressive disorder diagnoses and depressive symptom severity. Participants respond on a 4-point Likert-type scale (0 = *not at all* to 3 = *nearly every day*). Scores range from 0 to 27 with higher scores indicating more severe depression. The PHQ-9 exhibits convergent validity and sensitivity to change; scores on the PHQ-9 were correlated with the Symptom Checklist-20 and changes in PHQ-9 scores were similar or greater than change in SCL-20 (39). Validity and measurement invariance of PHQ-9 with Asian American college students has been confirmed (40). Internal consistency for the total scale score in our sample was 0.91.

Internalized racism

The Internalized Racism in Asian American Scale [(32); IRAAS] is a 14 item 3-factor scale that measures the degree to which Asian Americans internalized hostile attitudes and negative messages regarding their racial identity. The three subscales are: (a) Self-negativity; global devaluation and negative attitudes directed toward one's own Asian American identity, (b) Weakness Stereotypes; internalized beliefs in negative stereotypes of deficit or weakness inherent to being Asian American, and (c) Appearance Bias; endorsement of Eurocentric standards of attractiveness and downward comparisons of Asian Americans. The total scale score was used in the current study. Responses are based on a 6-point Likert-type scale (1 = *strongly disagree* to 6 = *strongly agree*), with higher scores indicating greater internalized racism. Positively worded items were reverse-scored. A sample item is "I sometimes wish I weren't Asian." Convergent validity was assessed by correlating scores with Collective Self-Esteem Scale and authors indicated IRAAS was valid. Predictive validity was also demonstrated; high levels of internalized racism were significantly predictive of depressive symptoms. The internal consistency for the total scale score was 0.88.

Data analysis

We used polynomial regression and response surface analysis [PRRSA; (37)] to model the three-dimensional representation (e.g., Figure 1) of the congruence between GRM frequency (GRMF; X) and stress appraisal (GRMS; Y). PRRSA was the method of choice because it addresses the limitations of difference scores (i.e., low reliability and loss of unique outcome interpretations when the same item is rated across time or by the same participant) by retaining and modeling the independent effects of the two predictors simultaneously with the outcome variable [Z; (37)].

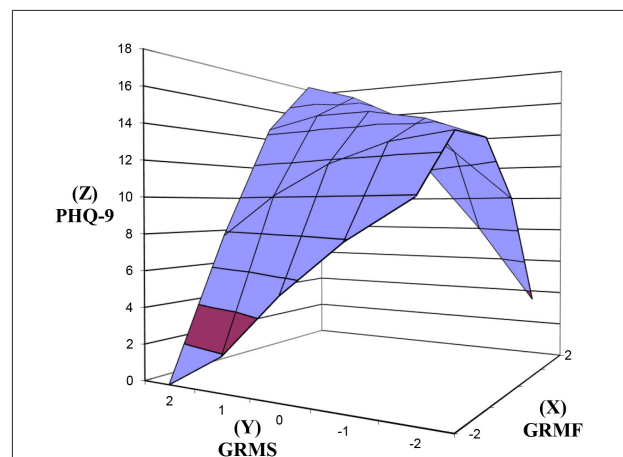


FIGURE 1

Response surfaces predicting PHQ-9 as a function of congruence and discrepancy between GRMF and GRMS. PHQ-9, Patient Health Questionnaire-9; GRMF, Gendered Racial Microaggressions Frequency; GRMS, Gendered Racial Microaggressions Stress; Line of congruence ($X = Y$; back to front); Line of discrepancy ($X = -Y$; left to right); point of lowest congruence ($-2, -2$; front corner); point of highest congruence ($2, 2$; back corner); congruence increases from front to back corner; right most corner ($2, -2$) = discrepancy between high GRMF-low GRMS; left most corner ($-2, 2$) = discrepancy between low GRMF and high GRMS.

Following Shanock et al. (37), we created three new variables for the X and Y predictor variables: (a) square of the centered GRMF, (b) cross-product of the centered GRMF and GRMS, and (c) square of the centered GRMS. The three new variables, along with the X (GRMF) and Y (GRMS) predictor variables were entered into a polynomial regression model predicting the outcome variables (Z; PHQ-9, IRAAS) to obtain regression (gamma) coefficients and standard errors, which were used to generate the response surfaces (e.g., Figure 1) and coefficients for the slopes and curvatures above the lines of congruence and discrepancy. Social class and generational status were also entered into the model as covariates. The spreadsheet provided by Shanock et al. (37) was used to generate the coefficients and the surface figures.

The equation for the model was:

$$\text{PHQ9/IRAAS} = b_0 + b_1 \text{GRMF} + b_2 \text{GRMS} + b_3 \text{GRMF}^2 + b_4 \text{GRMF} * \text{GRMF} + b_5 \text{GRMS}^2 + e.$$

We tested our hypotheses by examining the significance of congruence and discrepancy (across lines of congruence and discrepancy) between the X and Y predictor variables in relation to the outcome variables (Z). The degree of congruence is indicated on the line of congruence that extends from congruently low values ($-2, -2$; i.e., front corner in Figure 1) to congruently high values ($2, 2$; i.e., back corner in Figure 1). A significant positive slope along the line of congruence ($x = y$) would confirm the hypothesis that congruently higher

TABLE 1 Descriptive statistics and bivariate correlations of study variables.

Variables	Descriptives						Correlations			
	<i>M</i>	<i>SD</i>	Min	Max	Skewness	Kurtosis	1	2	3	4
1. GRMF	2.77	0.97	0	5.00	−0.05	−0.36	–			
2. GRMS	2.81	1.13	0	5.00	−0.40	−0.49	0.85**	–		
3. PHQ-9	16.22	5.93	9.00	35.00	1.06	0.59	0.28**	0.27**	–	
4. IRAAS	2.43	1.01	1.00	7.00	1.38	3.31	0.11	0.03	0.25**	–

GRMF, Gendered racial microaggressions-frequency; GRM, Gendered racial microaggressions-stress; PHQ-9, Patient health questionnaire-9; IRAAS, Internalized racism in Asian Americans scale. ** $p < 0.01$.

X (GRMF) and Y (GRMS) variable scores are significantly associated with higher Z (e.g., PHQ), whereas a negative slope would indicate a decrease in Z.

The degree of discrepancy is indicated on the line of discrepancy that extends from a point of lowest X and highest Y values (−2, 2; i.e., left corner in Figure 1) to a point of highest X and lowest Y values (2, −2; i.e., right corner in Figure 1). Along the line of discrepancy ($x = -y$), a significant negative slope would confirm the hypothesis that Z (e.g., PHQ-9) is higher when Y (GRMS) is high and X (GRMF) is low, rather than a discrepancy due to low GRMS (Y) and low GRMF (X). On the other hand, a positive slope would indicate that the reverse is evident.

Although linear associations between the variables were the focus of the study, tests of the curvatures of the response surfaces are provided as part of the PRRSA. A significant curvature along either the line of congruence or the line of discrepancy indicates a non-linear response surface. A negative curvature indicates a concave surface that is downward curving while a positive curvature indicates a convex surface that is upward curving. Both curvatures can be used to infer whether outcomes increase or decrease sharply depending on congruence or discrepancy. We examined any significant curvatures in interpreting the results of the slopes.

Results

Preliminary analyses

Using the criteria where kurtosis and skewness between −2 and +2 suggest normal distribution (41), data were generally normally distributed except for IR (kurtosis = 3.31), suggesting that participants generally reported high levels of internalized racism. Because most variables showed conformity to the normal distribution and transforming data also carry the risk of impacting the interpretation of results, we elected to not undertake a data transformation procedure. Examination of the Q-Q plot suggested linear relationships between the independent and dependent variables. The correlation between GRMS and GRMF was 0.85, which was expected given that it is an association based on the same items. Shanock et al. (37)

suggest that no multicollinearity ($VIF < 5$) is a requirement to conduct the RSA. The VIF value was 3.56 between GRMS and GRMF, which was within the range for evidence of no multicollinearity. Descriptive statistics and bivariate correlations of study variables are listed in Table 1.

GRMF GRMS congruence and discrepancy in relation to PHQ-9

As seen in Figure 1, above the line of congruence ($x = y$), the response surface rises upward toward the top back corner of the graph [xy coordinates (2, 2)] where GRMF (X) and GRMS (Y) are both high and PHQ-9 (Z) is high. In support of hypothesis 1, the increase in PHQ-9 as GRMF GRMS congruence increases was significant (Table 2), as reflected in the significant positive slope for the response surface above the line of congruence ($x = y$) = 1.96, $SE = 0.38$, $t = 5.196$, $p < 0.001$. The effect size was medium to large, Cohen's $d = 0.60$. The curvature above the line of congruence ($x = y$) was not significant.

Regarding the discrepancy between GRMF and GRMS, neither the slope nor the curvature was significant in predicting PHQ-9 (see Table 2). Thus, the degree of GRMF GRMS discrepancy was not significantly predictive of PHQ-9 regardless of the nature of the discrepancy (high GRMS-low GRMF or low GRMS-high GRMF). Overall, the model accounted for XX% of the variance in PHQ-9.

GRMF GRMS congruence and discrepancy predicting IRAAS

As seen in Figure 2, above the line of congruence ($x = y$), the response surface rises upward toward the top back corner of the graph [xy coordinates (2, 2)] where GRMF (X) and GRMS (Y) are both high and IRAAS (Z) is high. The increase in IRAAS as GRMF GRMS congruence increases was significant (Table 2), as reflected in the significant positive slope for the response surface above the line of congruence ($x = y$) = 0.15, $SE = 0.06$, $t = 2.475$, $p = 0.014$. The effect size was small, Cohen's $d =$

TABLE 2 Congruence and discrepancy slopes and curvatures of the response surfaces.

Effect	Coefficient	SE	<i>t</i>	<i>p</i> -value
DV (z) = PHQ-9				
a1: Level of congruence predicting DV ($x = y$ slope)	1.96	0.38	5.20	<0.001
a2: Non-linearity of congruence ($x = y$ curvature)	−0.03	0.28	−1.07	0.284
a3: Level of discrepancy predicting DV ($x = -y$ slope)	1.38	1.24	1.12	0.264
a4: Non-linearity of discrepancy ($x = -y$ curvature)	−3.59	2.30	−1.56	0.120
DV (z) = IRAAS				
a1: Level of congruence predicting DV ($x = y$ slope)	0.15	0.06	2.48	0.014
a2: Non-linearity of congruence ($x = y$ curvature)	−0.07	0.05	−1.27	0.205
a3: Level of discrepancy predicting DV ($x = -y$ slope)	0.60	0.22	2.75	0.006
a4: Non-linearity of discrepancy ($x = -y$ curvature)	−0.54	0.40	−1.34	0.181
DV (z) = PHQ-9 at Low IRAAS				
a1: Level of congruence predicting DV ($x = y$ slope)	2.01	0.84	2.39	0.021
a2: Non-linearity of congruence ($x = y$ curvature)	−0.04	0.73	−0.06	0.953
a3: Level of discrepancy predicting DV ($x = -y$ slope)	−2.67	3.73	−0.71	0.479
a4: Non-linearity of discrepancy ($x = -y$ curvature)	−3.87	5.97	−0.65	0.520
DV (z) = PHQ-9 at Mean IRAAS				
a1: Level of congruence predicting DV ($x = y$ slope)	1.63	0.42	3.89	<0.001
a2: Non-linearity of congruence ($x = y$ curvature)	−0.07	0.30	−0.24	0.813
a3: Level of discrepancy predicting DV ($x = -y$ slope)	1.24	1.40	0.89	0.374
a4: Non-linearity of discrepancy ($x = -y$ curvature)	−4.84	2.86	−1.70	0.091
DV (z) = PHQ-9 at High IRAAS				
a1: Level of congruence predicting DV ($x = y$ slope)	3.78	1.94	1.95	0.058
a2: Non-linearity of congruence ($x = y$ curvature)	−1.80	1.29	−1.39	0.171
a3: Level of discrepancy predicting DV ($x = -y$ slope)	5.62	5.31	1.06	0.296
a4: Non-linearity of discrepancy ($x = -y$ curvature)	−6.16	7.49	−0.82	0.416

DV, dependent variable; PHQ-9, Patient health questionnaire-9; IRAAS, Internalized racism in Asian American scale.

0.28. The curvature above the line of congruence ($x = y$) was not significant.

As seen in Figure 2, above the line of discrepancy ($x = -y$), the response surface rises from the bottom left corner (−2, 2) toward the top right corner of the graph (2, −2) where GRMF (X) is highest and GRMS (Y) is lowest, and IR (Z) is high. In support of hypothesis 2, the increase in IRAAS as this discrepancy increased was significant (Table 2), as reflected in the significant positive slope for the response surface above the line of discrepancy ($x = -y$) = 0.60, $SE = 0.22$, $t = 2.754$, $p = 0.006$. The effect size was small to medium, Cohen's $d = 0.31$. The curvature above the line of discrepancy ($x = y$) was not significant.

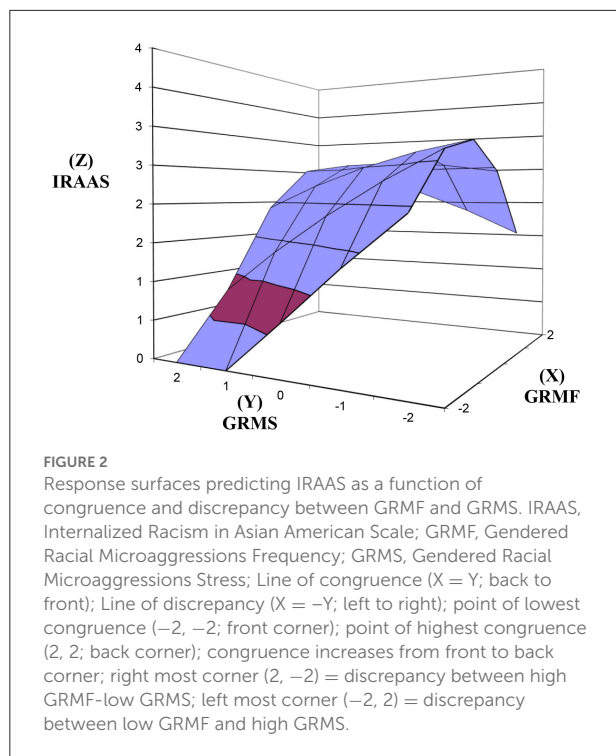
GRMF GRMS congruence and discrepancy predicting PHQ-9 across low, mean, high IRAAS levels

At low IRAAS (Figure 3), in support of hypothesis 3, the increase in PHQ-9 as GRMF GRMS congruence increases was

significant (Table 2) as reflected in the significant positive slope for the response surface above the line of congruence ($x = y$) = 2.01, $SE = 0.84$, $t = 2.394$, $p = 0.021$. The effect size was small, Cohen's $d = 0.27$. Contrary to hypothesis 3, the slope above the line of discrepancy ($x = -y$) was not significant in predicting PHQ-9. The congruence and discrepancy curvatures were not significant.

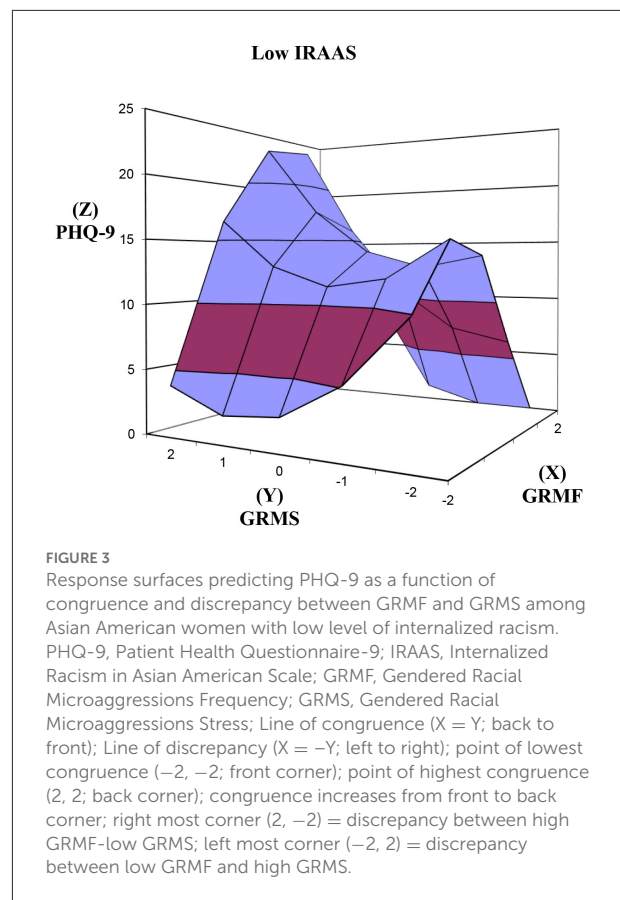
At mean IRAAS (Figure 4), in support of hypothesis 3, the increase in PHQ-9 as GRMF GRMS congruence increases was significant (Table 2) as reflected in the significant positive slope for the response surface above the line of congruence ($x = y$) = 1.63, $SE = 0.42$, $t = 3.890$, $p < 0.001$. The effect size was small to medium, Cohen's $d = 0.44$. Contrary to hypothesis 3, the slope above the line of discrepancy ($x = -y$) was not significant in predicting PHQ-9. The congruence and discrepancy curvatures were not significant.

Finally, as hypothesized, the slopes above the line of congruence ($x = y$) and the line of discrepancy were not significant at high IRAAS (Figure 5). The congruence and discrepancy curvatures were not significant.



Discussion

We used polynomial response surface analysis to examine congruence and discrepancy between frequency, or perceived number of GRM encounters and stress appraisal of GRM experienced among AAW. We found that greater congruence between the amount of GRM encountered and the amount of stress experienced significantly predicted depressive symptoms. Thus, as expected, AAW who encounter more GRM and a corresponding amount of more stress reported significantly more depressive symptoms than those encountering less GRM and lower amount of stress. The congruence between frequency and stress appraisal of GRM also had a significant relationship with internalized racism but at small effect. In terms of discrepancy, we found that higher frequency-lower stress discrepancy was significantly related to greater internalized racism, suggesting that AAW who experience more GRM but feel little stress are likely to hold greater beliefs of internalized racism. When we examined the congruence and discrepancy and their relationships with depressive symptoms across levels of internalized racism (low, mean, high), greater congruence was significantly associated with greater depressive symptoms at low to mean internalized racism levels but not at a high level. These findings suggest that the congruence and discrepancy between GRM encounters and the appraisal of the resulting stress carry important nuances to understanding how GRM affects the mental health of AAW.



Prior research informed by the stress process model has noted the importance of assessing encounters of racial discrimination, with the understanding that greater exposure can adversely impact health as the perceived stressors from discrimination exceeds available coping resources (14–16). While commonly used measures such as the Everyday Discrimination Scale (EDS) help to capture the frequency of discrimination, and the General Ethnic Discrimination Scale (GED) assesses the stressfulness of discrimination, studies have yet to demonstrate the concurrent interplay between dimensions of frequency and stress appraisal (16, 18). Thus, the current study sought to examine whether the degree of congruence and discrepancy between the frequency and stress appraisal of GRM would be associated with AAW depressive symptoms. In partial support of our first hypothesis, findings indicate that AAW who report proportional amounts of stress from GRM encounters (i.e., congruence) are more likely to experience an increase in their depressive symptoms.

These results align with previous research that highlights the role of acculturation, particularly among Asian American individuals raised in the U.S. who are more apt to identify and understand the negative implications of discrimination, and report more depressive symptoms as a result (25, 26).

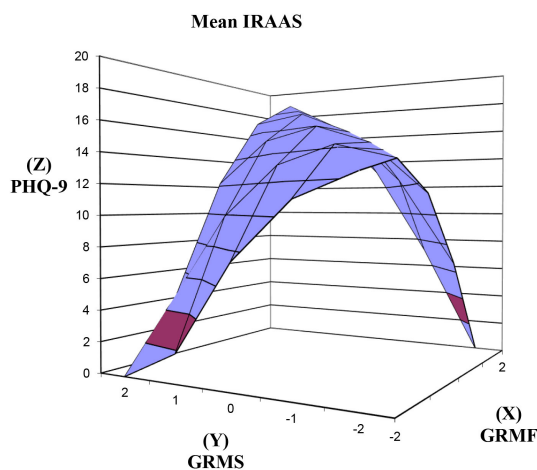


FIGURE 4
Response surfaces predicting PHQ-9 as a function of congruence and discrepancy between GRMF and GRMS among Asian American women with mean level of internalized racism. PHQ-9, Patient Health Questionnaire-9; IRAAS, Internalized Racism in Asian American Scale; GRMF, Gendered Racial Microaggressions Frequency; GRMS, Gendered Racial Microaggressions Stress; Line of congruence ($X = Y$; back to front); Line of discrepancy ($X = -Y$; left to right); point of lowest congruence ($-2, -2$; front corner); point of highest congruence ($2, 2$; back corner); congruence increases from front to back corner; right most corner ($2, -2$) = discrepancy between high GRMF-low GRMS; left most corner ($-2, 2$) = discrepancy between low GRMF and high GRMS.

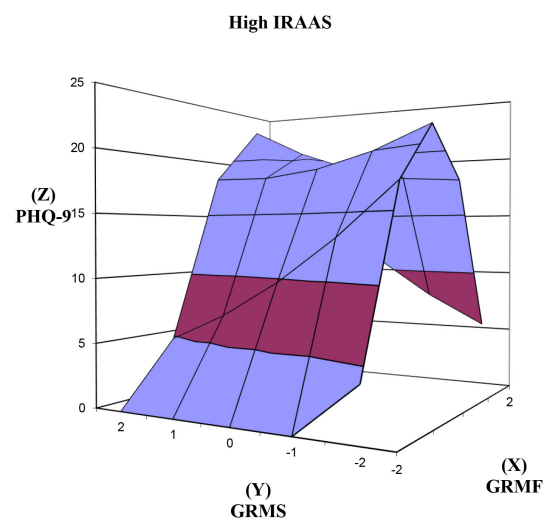


FIGURE 5
Response surfaces predicting PHQ-9 as a function of congruence and discrepancy between GRMF and GRMS among Asian American women with high level of internalized racism. PHQ-9, Patient Health Questionnaire-9; IRAAS, Internalized Racism in Asian American Scale; GRMF, Gendered Racial Microaggressions Frequency; GRMS, Gendered Racial Microaggressions Stress; Line of congruence ($X = Y$; back to front); Line of discrepancy ($X = -Y$; left to right); point of lowest congruence ($-2, -2$; front corner); point of highest congruence ($2, 2$; back corner); congruence increases from front to back corner; right most corner ($2, -2$) = discrepancy between high GRMF-low GRMS; left most corner ($-2, 2$) = discrepancy between low GRMF and high GRMS.

Further, while some research has pointed to ethnic identity (i.e., a sense of clarity and pride in one's ethnic group) as an important buffer against discrimination, there is also evidence to suggest that high ethnic identity among Asian Americans may exacerbate the link between discrimination and depressive symptoms, as experiences of chronic discrimination may also increase sensitivity to rejection or devaluation of one's race/ethnicity (42–44). Another possible explanation may be related to the contexts where AAW encounter GRM, such as the workplace, where it is difficult to walk away from GRM perpetuated by supervisors or colleagues that AAW must interact with daily, and can serve as an added stressor on top of existing job demands and responsibilities (45, 46). Given the high rates of suicide among AAW in their late adolescence and emerging adulthood, future research should assess both frequency and stress appraisal to understand what factors drive proportional amounts of stress in relation to GRM encounters, and thereby increase their risk for depressive symptoms.

Previous studies have noted the importance of examining the role of internalized racism among Asian Americans, particularly as it may lead to the belief in harmful racist stereotypes and acceptance of one's racial inferiority that can lead to worse mental health (9, 35). Yet, few studies have

examined the role of internalized racism among Asian American women that encounter GRM (7). Hence, the current study sought to assess whether AAW who report greater congruence between GRM frequency and appraised stress are more likely to experience higher internalized racism. In support of our second hypothesis, our findings indicate AAW who report proportional amounts of stress from their encounters with GRM are more likely to experience significant increases in internalized racism. This finding is consistent with Choi et al. (32) conceptualization of internalized racial oppression among Asian Americans, and suggests that AAW that endorse oppressive ideologies of GRM (e.g., AAW as submissive and exoticized) may feel more self-negativity and an overall devaluation of their identity as an Asian American woman. However, given the small effect size, these results should be interpreted with caution, as the internalized racial oppression dimensions of weakness stereotype and appearance bias can lead to different gendered experiences for AAW as compared to Asian American men, and may instead manifest as more of a complex self-protective strategy for AAW (34).

Indeed, our findings suggest AAW may engage with internalized racism as a self-protective strategy against poor mental health. The results indicate a discrepancy of

high frequency but low stress was significant in predicting internalized racism among AAW, suggesting that AAW that perceive more GRM, yet feel little stress as a result, may hold greater beliefs of internalized racism. In particular, when viewed through the lens of appropriated racial oppression, AAW may choose to adapt to oppressive ideologies, instead of passively accepting the negative messaging associated with GRM (10, 33). For instance, AAW may consciously or subconsciously endorse assumptions of their submissiveness and fetishized exoticization, and find ways to downplay, deny, and even justify their experiences of GRM (33). Accordingly, weakness stereotypes and appearance bias may operate in intricate ways, such that being meek is considered desirable among Asian women (i.e., aligns with the dominant White supremacist society's views of AAW as submissive). Thus, AAW that report high levels of internalized racial oppression, may not view GRM as discriminatory, and therefore not perceive these events as stressful, contributing to a greater discrepancy between the perceived number of GRM (i.e., frequency) and stress appraisal. However, it is important to note that not all self-protective strategies will produce less stress. In fact, a recent phenomenological study investigating how Black female school leaders cope with gendered racism, finds that across a range of coping mechanisms, including self-protective strategies, there is a cost to coping, where the constant struggle to maintain their emotional health takes a toll on their mental and physical health (47). More research is needed to understand how AAW cope with GRM, and how different coping strategies are linked with stress.

Further subtleties in AAW's mental health emerged when examining the congruence between frequency and stress and their relationship with depressive symptoms across levels of internalized racism. At low and mean levels of internalized racism, greater congruence between frequency and stress was significantly associated with greater depressive symptoms, but not at high levels of internalized racism. Given the small effects size found for AAW at low levels of internalized racism, depressive symptoms that AAW experienced may be attributed more to the stress they experience from GRM encounters. However, mean levels of internalized racism appear to confer the greatest risk, at medium effect size, which suggests that AAW that report a proportional amount of stress from their encounters with GRM may feel more self-hate as they internalize negative messaging from GRM, thereby increasing their risk for depressive symptoms.

Conversely, at high levels of internalized racism, AAW reported no significant risk for depressive symptoms. A possible explanation for the lack of significance, is that AAW may adopt a more self-protective survival strategy to avoid feelings of self-hate and self-negativity, and instead find ways to identify with and utilize aspects of GRM that can help diminish their depressive symptoms. For example, some AAW may endorse views of Asian American women as hypersexualized

and exoticized, such that being treated as a sexual object or as submissive may not be perceived as a stressful discriminatory event, particularly if they themselves choose to "play the part." Despite results indicating that AAW at high levels of internalized racism do not report depressive symptoms, which could be interpreted as having potential protective benefits, it is important to note that AAW may still incur self-deprecating costs to their mental health in the long-term for becoming "honorary Whites" or "White adjacent" and upholding detrimental racist ideologies perpetuated through White norms and beliefs (48). In addition, research on the John Henryism hypothesis among African American women suggests that AAW that perform as the exotic and hypersexualized Asian women may be engaging in a form of high effort coping in response to prolonged exposures to GRM, and will likely experience significant costs to their physical and mental health in the long term (49). Accordingly, future research would need to assess other psychological factors such as color-blind racial attitudes and the role of AAW's gender racial identity to understand how AAW's level of critical awareness of their own gender racial identity and gendered racism in the U.S. can affect their perceptions and stress appraisal of GRM, thereby shaping important nuances in AAW's mental health, particularly when considering the role of internalized racism.

Limitations and directions for research

Despite the novel contributions of our study, there are several limitations that inform future research. First, the data was cross-sectional and we are limited to interpreting how the levels of frequency and stress appraisals are associated with concurrent levels of depressive symptoms reported by the participants. As we conceptualized, we assume that when AAW experience GRM, they subsequently feel a certain level of stress based on their appraisal, which may then contribute to the development of depressive symptomatology. This sequence would need to be examined by replicating our study using longitudinal data. Second, although our sample represents diverse Asian ethnicities, the majority of the participants are highly educated young adult individuals with East Asian roots which limit our generalizability. Our findings would need to be extended with larger samples of South Asian American and Southeast Asian American individuals and across varying educational status and age groups. Third, the GRMS and IRAAS scales have been developed with greater samples of East Asian American participants and conceptualization that may align more with the stereotypes of East Asian Americans. While there are shared components of the GRM and internalized racism across ethnicities, it would be important for future studies to explicate the unique differences in these experiences (e.g., colorism) for greater

culture-specific understanding. Fourth, the measures used in the study were self-report and may be prone to self-report bias. In particular, self-report appraisal of stress is subjective and does not reflect objective indications of actual stress levels that could be obtained *via* physiological measures (e.g., cortisol swab). Furthermore, while we examined internalized racism as one factor that could differentiate the recognition and stress appraisal process of GRM events, there may be additional factors that could help contextualize the variations such as acculturation. For example, Asian Americans who are less acculturated have been found to report greater color-blind racial attitudes compared to more acculturated individuals (29). Futures studies can expand our findings by using more objective markers of stress appraised from GRM events. Of note, qualitative studies can help explore additional contextual factors such as acculturation and color-blind racial attitudes to understand the complexity of AAW's GRM experiences.

Implications for practice and advocacy

Our findings provide implications for interventions geared toward mitigating the harmful effects of GRM among AAW. Given that depressive symptoms are significantly associated with those who encounter a high level of GRM and appraise a high level of stress, it may be useful to develop interventions that help to externalize the harmful effects of GRM and lessen the stressfulness. For instance, Miller et al. (50) suggest the importance of externalizing the harmful internalizations stemming from racism encounters so that it does not lead to the development of psychopathology. Externalization may be achieved by helping AAW engage at the individual and community levels with counter-narratives that signify the positive self-concepts and pride in being an Asian American woman in their respective ethnic cultures and create social support and community around the shared experiences of GRM. For instance, interventions such as the Asian Women's Action for Resilience and Empowerment [AWARE; (51)] that focuses on gender- and culture-specific group psychotherapy intervention for AAW dealing with interpersonal violence and trauma could be tailored to help AAW experiencing depressive symptoms from GRM.

Individual and community level interventions can also target internalized racism, which has been found to dictate the recognition and stress appraisal of GRM among AAW. In particular, those who harbor high levels of internalized racism may be instilling beliefs that reinforces Asian inferiority and disavowal of the reality of White supremacist oppression. This may be a complex state of survival by succumbing to the

dominant group and the oppressive narrative but one that can lead to self-destructive implications given the self-negativity and -erasure [e.g., suicide ideation; (7)]. Conversations and advocacy around this issue must occur in tandem with a critical evaluation of assimilationist and internalized Whiteness ideals in Asian American communities, as well as the White dominant society that continues to reinforce systems of oppression against AAW (52).

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by University of Maryland-College Park Institutional Review Board. The patients/participants provided their written informed consent to participate in this study.

Author contributions

BK is the principal investigator who led the conceptualization, data collection, methodology, data analysis, and manuscript writing. MW contributed to manuscript writing and editing. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The slow violence of racism on Asian Americans during the COVID-19 pandemic

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Racism against people of Asian descent increased by over 300% after the COVID-19 pandemic outbreak in the United States, with one in five Asian Americans reporting direct experiences with overt discrimination. Large-scale efforts and resources initially, and quite understandably, prioritized investigating the physiological impact of the coronavirus, which has partially delayed research studies targeting the psychological effects of the pandemic. Currently, two studies tracked the unique relationships between psychosocial factors, such as experiencing everyday racism, and the self-reported wellbeing of Asian Americans in the United States and compared these associations with Latinx Americans. Study 1 (April 2020–April 2021) examined how Asian and Latinx Americans varied in their levels of wellbeing, fear of the coronavirus, internalized racism, and everyday experiences with racism. Study 2 (September 2021–April 2022) included the same variables with additional assessments for victimization distress. We used the *CDC Museum COVID-19 Timeline* to pair collected data from our studies with specific moments in the pandemic—from its known origins to springtime 2022. Results highlighted how slow and deleterious forms of racist violence could wear and tear at the wellbeing of targeted people of color. Overall, this research underscores the possible hidden harms associated with slow-moving forms of racism, as well as some of the unseen stressors experienced by people of color living in the United States.

KEYWORDS

anti-Asian racism, everyday racism, well-being, COVID-19, Asian Americans

Introduction

In the United States, the COVID-19 pandemic served as a catalyst for the perpetuation of violence toward people of color (1–3). These examples included individuals acting on long-standing fears about people of Asian descent, particularly newer immigrants to the United States. For ease of nomenclature, we will use the term *Asian American* to include all people of Asian descent residing in the United States. In addition to this, as suggested by the American Psychological Association (APA)'s best practices for bias-free language (4), we will use labels consistent with Asian American or other racial groups, such as Latinx American and White American.

The 1882 Chinese Exclusion Act marked the first significant U.S. law to restrict any form of immigration (5). Decades later, anti-Asian sentiments were further exemplified by the reprehensible treatment of Asian immigrants at Angel Island in 1910 and the targeted detainment of Japanese Americans in U.S. internment camps during World War II (6, 7). Historic events such as these have prompted researchers to broaden the definition of racism-related violence to include microaggressive acts, as well as other unseen or less seen attacks, in an attempt to address and raise awareness about the multi-sided injustices people of color have often been forced to endure throughout the U.S. history (8–10). More recently, hateful sentiments aimed at specific groups and people have spread throughout many cyber platforms, such as Reddit, Twitter, and Facebook, which may elevate the potential for portions of these platforms to become havens for promoting and sustaining racism (11–13).

Since the start of the pandemic, race-related violence and hate crimes against Asian Americans and Asian-looking people have exponentially increased by 339%, compared with an overall 11% increase in other hate crimes (14). Adding to this trend, a recent report by the Center for the Study of Hate and Extremism (15) revealed that one in five Asian Americans reported a direct experience with overt discrimination during the pandemic years. Furthermore, Nguyen et al. (16) analyzed negative sentiments on Twitter, which appeared in 2.3 million tweets during the early months of the COVID-19 pandemic. They found that race-related tweets containing anti-Asian sentiments rose ~55% in a single month alone (i.e., February to March 2020). Another study by Hswen et al. (17) investigated a different aspect of anti-Asian sentiments on Twitter and indicated that the hashtag #ChineseVirus was associated with anti-Asian sentiments 50.4% of the time, compared to 19.7% for the hashtag #Covid19. These results reveal that racist sentiments can appear in a variety of online contexts—even if they were not originally intended for that purpose.

Yet, promisingly, recent efforts to end the blatant attacks and other forms of race-related hate against Asian Americans have grown considerably (2, 3). For example, healthcare leaders have started to recommend the use of non-bias language around the COVID-19 pandemic in an attempt to destigmatize the associations between Asian Americans and the pandemic (12, 17). In other instances, stronger partnerships have started to form between professionals, community leaders, and grassroots organizations as a way to better understand and combat the underlining hate that many Asian American communities are facing, as well as the experiences of people who are misperceived as being of Asian descent (15). By both renewing and strengthening these communal relationships, a core objective is to build effective solutions to potentially halt the continued onslaught of discrimination against Asian Americans.

Taken together, rampant anti-Asian sentiments have become a major health issue for Asian Americans today (2, 18–21). But even before the more recent contributions to this trend,

Asian Americans have largely been neglected in and excluded from discussions of U.S. racism; instead, they are more often given the *model minority* stereotype (22), which depicts all Asian people as highly educated and financially stable, compared with other people of color (23). Asian Americans, however, have continuously reported racism-related attacks, both overt and covert (24)—despite arguments that this stereotype reflects a positive image of Asian people and their cultures. Many of the offenses faced by Asian Americans, both past and present, are connected to nativistic and xenophobic racial microaggressions (25), which are considered daily stressors (26) that can significantly impact both psychological (27) and physiological health (28). Due to the continuation of anti-Asian violence in the United States, further investigation of this significant public health concern is critically needed.

Hence, we launched two studies that engaged environmentalist Rob Nixon's slow violence theory (29), along with multicultural psychologist Derald W. Sue's microaggression theory (25), to examine the nuanced impact of the COVID-19 pandemic on Asian Americans compared with that on Latinx Americans. Previous research on Asian and Latinx Americans has reported that these groups tend to have similar experiences with everyday racism, particularly around others perceiving them as perpetual foreigners or less "American" than U.S. residents with a white complexion (21, 30, 31). According to Nixon's slow violence theory (29), violence can occur as either fast and attention-grabbing (e.g., physical attacks in public) or slow and hidden from view (e.g., internalizing racism psychologically). To complement this theoretical framework, Sue et al. (25) scholarship on microaggressions—everyday forms of discrimination—maps on to this slow form of racist violence toward people of color. Empirical research on racial microaggressions has also supported these associations and shown a robust negative effect on the wellbeing of Asian and Latinx Americans (27, 32, 33). Moreover, Wong-Padoongpatt et al. (2) found that Asian Americans were more likely to internalize and believe racist sentiments toward their group than Latinx Americans during the COVID-19 pandemic. These can be understood as insidious types of slow violence of racism that can wear down people of color's sense of self and community.

Past scholarship on racism suggests that these types of beliefs and their associated acts tend to fluctuate with the concurrent sociopolitical events and environments. One study by Barrita et al. (32) found that Asian and Latinx Americans frequently share common discriminatory experiences related to others presuming they may have undocumented immigration statuses. Importantly, findings from that study indicated that Asian Americans reported experiencing more microaggressions around their perceived foreignness during the COVID-19 pandemic than during the times before the pandemic. According to the Racial Position Model (31), the social-racial

hierarchy in the United States is shaped across two main dimensions—cultural foreignness and perceived inferiority—to position each racial group. From the perspective of this model, Asian and Latinx Americans, compared with White and Black Americans, are continuously racialized as foreigners and perpetually unable to assimilate to the U.S. culture (31, 32). Asian and Latinx Americans have reported being discriminated based on assumptions of nationality, immigration status, and race (30–32). Therefore, the current studies use Latinx Americans as a comparison community for Asian Americans, given their shared experiences of racialization.

Notably, medical experts have demonstrated that an individual's fear of the coronavirus can potentially amplify the damaging effects of the virus (34–36). Other studies have also shown that fear is often directly associated with the transmission rates of infectious diseases, as well as their rates of mortality and morbidity (34). Yet, most strategies for combating COVID-19 have almost exclusively focused on containing infections, distributing effective vaccinations, and improving general treatment rates (34), without many underlying mechanisms in these associations receiving considerable attention. As more time has passed, however, there has been a growing concern among the general public regarding the psychosocial effects of the COVID-19 pandemic, such as xenophobic racism and other victimization experiences.

Thus, the current two studies tracked the relationships between different psychosocial factors and the wellbeing of Asian and Latinx Americans. Due to the dynamic nature of the pandemic, cross-sectional designs were used to evaluate multiple psychological factors related to racism, fear of the coronavirus, and their associations with one's wellbeing at different time points of the pandemic. This approach allowed for timely data collection without the additional resources needed for a longitudinal design; at the start of this project, it was also unclear how long the pandemic would last. Moreover, we incorporated novel measurements developed specifically for the pandemic, such as COVID-related victimization distress. Study 1 ($N = 366$) explored the effects of internalized racism, everyday racism, and fear of the coronavirus on overall wellbeing during the time frame of the nationwide lockdown and the first vaccine release that occurred. Study 2 ($N = 185$) examined the dynamics between the same psychosocial factors with additional assessments of victimization distress during the months following the widespread availability of COVID-19 vaccines in the United States.

Study 1

Study 1 (20 April 2020–27 April 2021) examined the relationships between psychosocial factors of everyday racism, internalized racism, and fear of the coronavirus with overall wellbeing among Asian and Latinx Americans. According to

the *CDC Museum COVID-19 Timeline* (37), the first case in the United States appeared in mid-January 2020, and the World Health Organization (WHO) declared COVID-19 a global pandemic on 11 March 2020. A few days later, former U.S. President Donald J. Trump declared COVID-19 a nationwide emergency. Despite this declaration, Trump and his administration were simultaneously associating the COVID-19 outbreak with China and the Chinese people by using references, such as “Chinese Virus” and “Kung Flu” in public forums. A recent study by Chong and Chen (11) testified to the far-reach of these words and found Donald Trump was, by far, the most influential promoter of #Chinavirus and #Chinesevirus for the entire Twitter network.

Given this dramatic shift in current anti-Asian sentiments, it was hypothesized that Asian Americans would be more negatively impacted overall during the pandemic with lower overall wellbeing, more exposure to everyday racism, more internalized racism, and more fear of the coronavirus than Latinx Americans. Moreover, it was hypothesized that overall wellbeing would be strongly associated with everyday racism, internalized racism, and fear of the coronavirus for Asian Americans, compared with Latinx Americans, that is, race would moderate the relationships between these psychosocial factors and wellbeing.

Materials and methods

Participants

Data for study 1 were collected online during the COVID-19 pandemic, with all participant responses coming from a diverse respondents from Southwest University in the United States. Participants were recruited from an undergraduate psychological participant pool and were compensated course credit for their participation in the study. The final sample in this study consisted of 366 respondents between 18 and 47 years ($M_{\text{age}} = 19.68$, $SD = 2.83$) and a gender breakdown of 68% women, 31.1% men, and 0.9% “other.” The overall racial breakdown of the sample was 48.1% Asian American and 51.9% Latinx American. The sample included 71 foreign-born and 284 U.S.-born participants. There were 11 participants identified as international students. A total of six participants were removed for residing outside the United States. See Table 1 for more details of the study's demographic characteristics and descriptive statistics.

Procedures

A university institutional review board reviewed and approved this study to assure compliance with federal and university regulations regarding human participants. Informed consent was obtained from all participants before their participation. Eligibility for the inclusion in the study is

TABLE 1 Demographic characteristics and descriptives of study variables compared across Asian and Latinx Americans for study 1 (April 2020–April 2021).

Variables	Race					
	Asian Americans		Latinx Americans		Full sample	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	19.43	2.11	19.90	3.35	19.68	2.83
SES	5.73 _a	1.46	5.03 _b	1.64	5.36	1.59
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Gender						
Women	102 _a	58.0	147 _b	77.4	249	68.0
Men	73 _a	41.5	41 _b	21.6	114	31.1
Other	1	0.6	2	1.0	3	0.9
Generation status						
1 st	15	8.5	7	3.7	22	6.0
1.5	35 _a	19.9	14 _b	7.4	49	13.4
2 nd	108 _a	61.4	143 _b	75.3	251	68.6
3 rd	9	5.1	14	7.4	23	6.3
4 th or more	2	1.1	8	4.2	10	2.7
Other	7	4.0	4	2.1	11	3.0
Total	176	48.1	190	51.9	366	100

SES, socioeconomic status. SES was from 1 to 10, with higher scores representing higher perceived SES. Subscript letters indicate statistically significant ($p > 0.05$) between group differences.

given as follows: 18+ years old, U.S. resident during the COVID-19 pandemic, and fluent in the English language. Respondents completed the survey questions online regarding their experiences during the COVID-19 pandemic.

Measures

Race and other demographic characteristics

Specific racial identities were assessed as part of the demographic questionnaire (Asian Americans and Latinx Americans), along with participants' age, gender, socioeconomic status (SES), and generational status. These demographic questions were delivered at the end of the study to avoid possible priming effects. As previously mentioned, the primary objective of this study was to examine whether there were significant racial differences across different psychosocial factors, particularly related to one's race and the pandemic, for Asian and Latinx Americans during the early stages of the COVID-19 pandemic. Only monoracial people were included in this study since the main study variables were race-related.

Wellbeing

The WHO Well-Being Index-5 (WHO-5) (38) consists of five positively worded items that reflect the presence or absence of wellbeing in a person's life (e.g., "Over the last 2 weeks, I have felt cheerful and in good spirits"). Assessment items were rated on a 6-point scale, ranging from 0 (*at no time*) to 5 (*all the time*),

with a possible raw score ranging from 0 to 25. The general scoring rule for the WHO-5 is multiplying the raw score by 4 so that the final score range is between 0 (i.e., representing the lowest level of wellbeing) and 100 (i.e., representing the highest level of wellbeing). Topp et al. (39) conducted a systematic review of the WHO-5 and established the two most commonly used cutoff scores: (1) *reduced wellbeing* with a score <50 and (2) *clinical depression* with a score <28. The WHO-5 scale has been validated consistently with diverse samples (39) and has been previously used to assess the wellbeing implications of racist experiences (40, 41). Wang et al. (41) found a strong Cronbach's alpha ($\alpha = 0.84$) using an exclusive Asian American sample. Cronbach's alpha value of the five items for study 1 were comparable at 0.86 for the Asian American sample, 0.89 for the Latinx American sample, and 0.88 for the final sample (both groups). Study 2 also had high internal reliability with an alpha of 0.89 for the full sample, and 0.88 and 0.89 for the Asian and Latinx American samples, respectively.

Everyday racism

The Everyday Discrimination Scale (EDS) (42) consists of nine items presenting possible experiences with discrimination (e.g., "Were you treated with less respect than other people"). The participants reported how often they experience each of the scenarios depicted by using a 4-point scale, ranging from 1 (*never*) to 4 (*often*). Another major focus of this study was to explore the perceived shift in racism-related experiences

during the COVID-19 pandemic. Therefore, we modified each EDS item with the words “before the COVID-19 pandemic” and “during the COVID-19 pandemic” to assess perceived experiences with everyday racism during the time frame. Higher scores indicated more consistent experiences with everyday discrimination. Previous studies have shown good internal reliability of the EDS, with $\alpha = 0.93$ for Latinx American samples (30) and $\alpha = 0.86$ for Asian American samples (2). In study 1, the scale items for the final sample were comparable at $\alpha = 0.86$ (assessing events before the pandemic) and $\alpha = 0.88$ (assessing events during the pandemic). The internal consistency level for the Asian American sample was $\alpha = 0.86$ before the pandemic and $\alpha = 0.90$ during the pandemic. For the Latinx American sample, the level was $\alpha = 0.87$ before the pandemic and $\alpha = 0.87$ during the pandemic. Study 2 had high internal reliability for the full sample, with an alpha level of 0.88 before the pandemic and 0.88 during the pandemic. For Asian and Latinx American samples, the alpha value ranged from 0.86 to 0.90.

Internalized racism

The Emotional Responses subscale within the Appropriated Racial Oppression Scale (ER-AROS) (43) is a 7-item subscale that measures emotional reactions people of color might experience in relation to their own racial identity or racial group to indicate whether an individual is potentially internalizing their experiences with racism. The participants were asked to rate their level of agreement for each scale item, using anchors from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores suggest greater levels of internalized racism. The ER-AROS showed high internal reliability with samples of Latinx and Asian Americans, with $\alpha = 0.83$ (43). Similar levels have also been found for Asian and Latinx American samples in studies specific to the pandemic, $\alpha = 0.79$ and $\alpha = 0.82$, respectively (2). In study 1, the ER-AROS demonstrated high Cronbach's alpha for all participants: Asian Americans ($\alpha = 0.82$), Latinx Americans ($\alpha = 0.79$), and final sample ($\alpha = 0.87$). Study 2 also showed a high-reliability alpha of 0.84 for the full sample, with Asian and Latinx samples, 0.85 and 0.81, respectively.

Fear of coronavirus

The Fear of COVID-19 Scale (FCV-19S) (34) consists of seven statements denoting behaviors or situations that describe a fear of the COVID-19 virus (e.g., “My hands become clammy when I think about coronavirus-19”). The participants reported their level of agreement for each statement using a Likert-type scale that ranges from 1 (*strongly disagree*) to 5 (*strongly agree*). The scores were summed to reflect an overall score ranging from 7 to 35. Higher scores indicated a greater fear of the coronavirus. The FCV-19S showed high internal reliability for Latinx Americans, with $\alpha = 0.87$ (44), and Asian Americans, with $\alpha = 0.89$ (45). Study 1 showed comparable results, with an alpha of 0.87 for all participant groupings. Study 2 also had high

internal reliability, with an alpha of 0.87 for the full sample, 0.85 and 0.88 for Asian and Latinx American samples, respectively.

Statistical analyses

Partial correlation analysis along with analysis of variance (ANOVA) of the demographic characteristics and study variables was used to examine differences among the sample while holding everyday experiences with racism before the pandemic constant (see Table 2). Comparison analyses were performed for certain demographic characteristics as they related to race and wellbeing, which determined the covariates used in subsequent analyses. The findings determined that gender, generational status, and SES would be held constant within the main study analyses.

Analysis of covariance (ANCOVA) was conducted on the main outcome and moderating variables—wellbeing, everyday racism, internalized racism, and fear of COVID-19—while controlling for a participants' gender, generational status, and SES. Perceived experiences of everyday racism before the COVID-19 pandemic were also controlled for to better assess the shift in participant experiences during the pandemic.

SPSS PROCESS Macro (46) was used to determine whether one's race moderated the relationship between psychosocial factors and overall wellbeing from April 2020 to April 2021 while controlling for the study covariates. PROCESS Model 1 allows testing the moderating effect with bootstrap confidence intervals. Race was also tested as a moderator for the relationship between one's fear of a COVID-19 infection and overall wellbeing. It was expected that psychosocial factors related to race and the pandemic would be strongly associated among Asian Americans, compared with Latinx Americans.

Study 1 results

ANCOVA suggested that Asian and Latinx Americans were not significantly different in their levels of wellbeing when controlling for everyday racism before the pandemic and the other covariates. Asian Americans, however, did report higher levels of internalized racism, $F_{(1,365)} = 27.25$, $p < 0.001$, $\eta_p^2 = 0.07$, and more everyday racism during the pandemic than Latinx Americans, $F_{(1,365)} = 6.84$, $p = 0.02$, $\eta_p^2 = 0.02$. Asian Americans also showed more fear of the coronavirus, which trended toward significance, $p = 0.07$. Figure 1 shows the differences for everyday racism, internalized racism, and fear of the coronavirus between Asian and Latinx Americans.

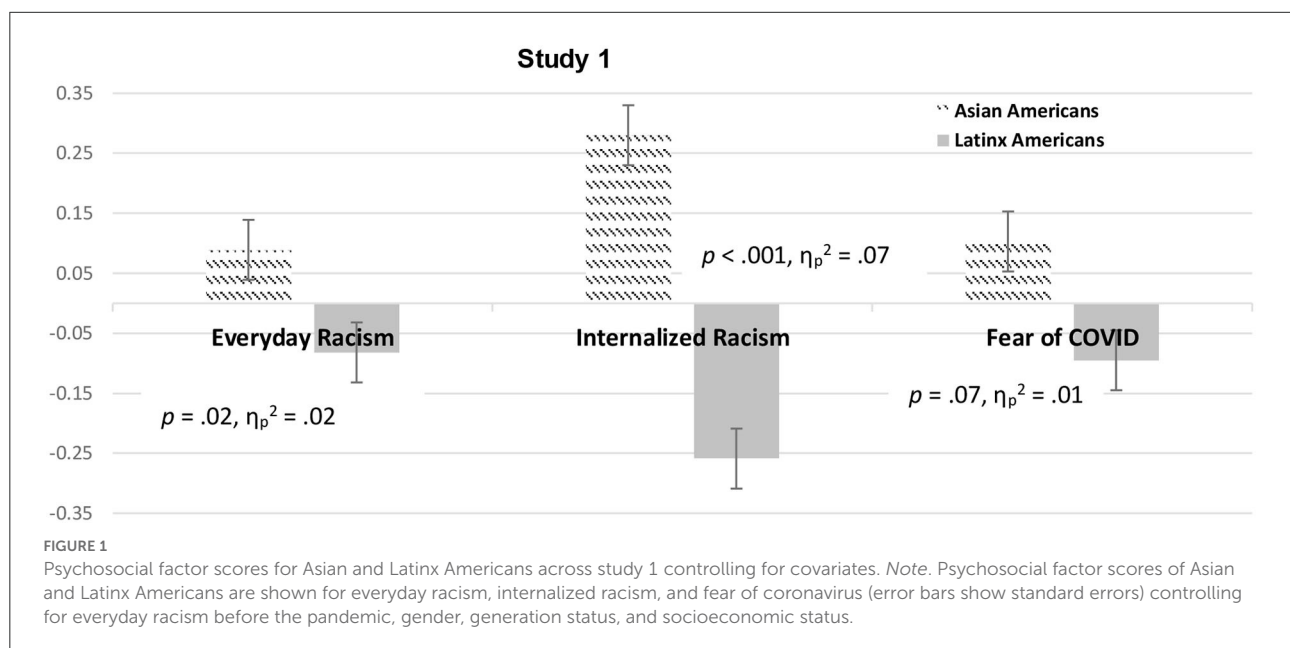
The three moderating analyses assessed the role of race on the relationship between psychosocial factors (everyday racism, internalized racism, and fear of the coronavirus) and an individual's overall wellbeing. The results showed that race (Asian vs. Latinx Americans) was a significant moderator for the effects of everyday racism and fear of the coronavirus but

TABLE 2 Correlations and ANOVA results for demographics and study variables for study 1 controlling for everyday racism before the pandemic.

Variable	Everyday racism	Internalized racism	COVID fear	Well-being
Partial correlations r				
Age	0.17*	0.04	0.08	−0.06
SES	0.01	−0.10	0.07	0.28***
Generation status	−0.07	−0.13*	0.05	0.04
ANOVA F				
Gender	0.04	5.60 _m *	17.94 _w ***	5.75 _m *
Race	7.99 _a **	24.07 _a ***	1.80	1.61

SES, socioeconomic status. SES was from 1 to 10, with higher scores representing higher perceived SES. Generation Status: 1 = 1st generation, 2 = 1.5 generation, 3 = 2nd generation, 4 = 3rd generation, 5 = 4th and higher generation. Gender: subscript m denotes higher mean for men, subscript w denotes higher mean for women. Race: subscript a denotes higher mean for Asian Americans.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.



not internalized racism. Notably, more everyday racism and heightened fear levels of the coronavirus negatively impacted the wellbeing of Asian Americans, but not Latinx Americans. For the relationship between everyday racism and wellbeing, the main independent variable (everyday racism) and the moderator (race) accounted for a significant amount of variance in wellbeing, $R^2 = 0.10$, $F_{(7,358)} = 5.96$, $p < 0.001$. See Table 3 for more details.

To avoid potential multicollinearity with the interaction term, the variables were centered, and an interaction term between everyday racism and race was created (47). The results revealed a significant moderating effect of race, $\Delta R^2 = 0.01$, $\Delta F_{(1,358)} = 4.26$, $p = 0.04$, on the relationship between everyday racism and wellbeing, $b = -0.80$, $t = -2.06$, $p = 0.04$, 95% CI $[-1.56, -0.04]$. Furthermore, an examination of the simple slopes showed a crossover interaction with a

negative relation for Asian Americans and a positive relation for Latinx Americans, that is, more experiences of everyday racism for Asian Americans showed lower wellbeing, whereas more experiences of everyday racism for Latinx Americans showed higher wellbeing. Figure 2 depicts the relationship between everyday racism and overall wellbeing as a function of race.

For the relationship between fear of the coronavirus and wellbeing, the main independent variable (fear of coronavirus) and the moderator (race) accounted for a significant amount of variance in wellbeing $R^2 = 0.12$, $F_{(7,358)} = 7.21$, $p < 0.001$. See Table 4 for more details. Again, the variables were centered, and an interaction term between fear of the coronavirus and race was created to avoid possible multicollinearity with the interaction term (47).

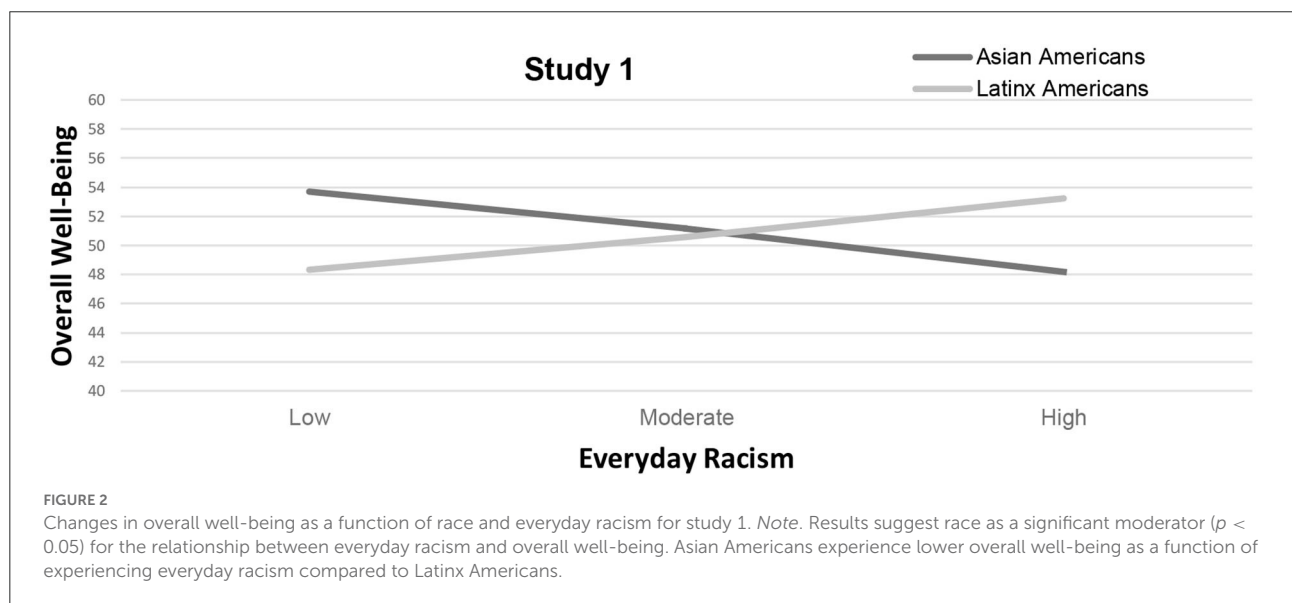
The results revealed a significant moderating effect of race, $\Delta R^2 = 0.02$, $\Delta F_{(1,358)} = 7.33$, $p = 0.01$, on the relationship

TABLE 3 Moderation results for everyday racism and race (Asian vs. Latinx Americans) with well-being as the outcome and everyday racism before the pandemic, gender, SES, and generation status as covariates for study 1.

Effect	<i>t</i>	<i>F</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
Constant	0.70		0.48	−14.75	31.189
Covariates					
Gender			0.10	−0.58	6.72
SES	5.26***		0.00	2.28	5.04
Generation status	0.98		0.33	−1.17	3.51
Everyday racism before the pandemic	−0.62		0.54	−0.15	2.50
Main effects					
Everyday racism	1.75		0.08	0.08	0.01
Race (Asian vs. Latinx Americans)	1.94		0.05	0.86	0.00
Interaction					
Everyday racism X race		4.26*	0.04		
Asian Americans	−1.27		0.20	−1.08	0.23
Latinx Americans	1.04		0.30	−0.34	1.09
Model summary					
	<i>R</i> ²	<i>F</i>	<i>p</i>	<i>df1</i>	<i>df2</i>
	0.10	5.96	0.00	7	358

Gender: 1 = woman, 2 = man. SES = socioeconomic status. SES was from 1 to 10, with higher scores representing higher perceived SES. Generation Status: 1 = 1st generation, 2 = 1.5 generation, 3 = 2nd generation, 4 = 3rd generation, 5 = 4th and higher generation. Race: 1 = Asian American, 0 = Latinx American.

p* < 0.05, *p* < 0.01, ****p* < 0.001.



between fear of the coronavirus and wellbeing, $b = -0.80$, $t = -2.06$, $p = 0.04$, 95% CI $[-1.56, -0.04]$. An examination of the slopes showed a significant effect for Latinx Americans, $b = -0.84$, $t = -3.47$, $p = 0.001$, 95% CI $[-1.32, -0.36]$, but not for Asian Americans, that is, more severe fear of the coronavirus for Latinx Americans was associated with significantly lower overall wellbeing. Figure 3 shows the relationship between fear of the coronavirus and overall wellbeing as a function of race.

Study 2

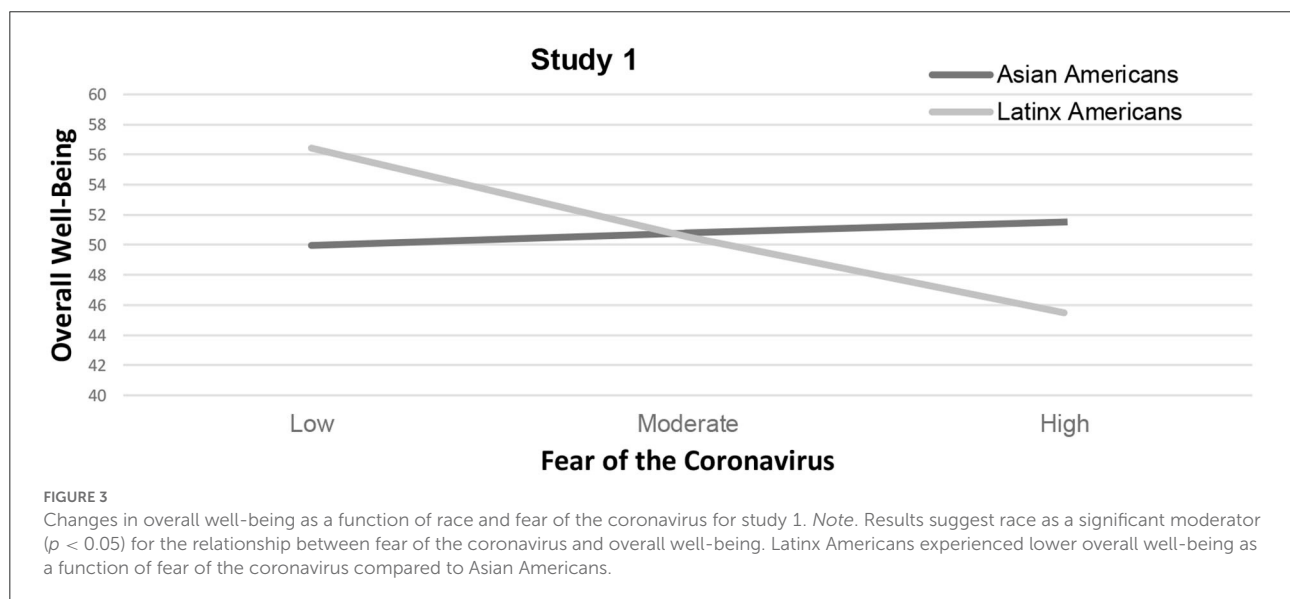
Study 2 (15 September 2021–29 March 2022) compared Asian and Latinx Americans during the months after the vaccine release and the lifting of major nationwide lockdown mandates. This study included the same measures as study 1, as well as additional assessments for distress over coronavirus victimization. Study 2 began data collection during a time when CDC studies provided further evidence that COVID-19

TABLE 4 Moderation results for fear of the coronavirus and race (Asian vs. Latinx Americans) with well-being as the outcome and everyday racism before the pandemic, gender, SES, and generation status as covariates for study 1.

Effect	<i>t</i>	<i>F</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
Constant	4.75		0.00	32.35	78.02
Covariates					
Gender	1.61		0.12	−0.66	6.66
SES	5.45***		0.00	2.28	5.04
Generation status	1.22		0.23	−1.17	3.51
Everyday racism before the pandemic	−0.80		0.43	−0.15	2.50
Main effects					
Fear of the coronavirus	−3.29	−3.29**	0.00	0.08	0.01
Race (Asian vs. Latinx Americans)	1.94	−2.48*	0.01	0.86	0.00
Interaction					
Fear of the coronavirus X race		7.33**	0.01		
Asian Americans	0.45		0.20	−1.08	0.23
Latinx Americans	−3.47***		0.00	−0.34	1.09
Model summary	<i>R</i> ²	<i>F</i>	<i>p</i>	<i>df1</i>	<i>df2</i>
	0.12	7.21	0.00	7	358

Gender: 1 = woman, 2 = man. SES, socioeconomic status. SES was from 1 to 10, with higher scores representing higher perceived SES. Generation Status: 1 = 1st generation, 2 = 1.5 generation, 3 = 2nd generation, 4 = 3rd generation, 5 = 4th and higher generation. Race: 1 = Asian American, 0 = Latinx American.

p* < 0.05, *p* < 0.01, ****p* < 0.001.



vaccines offered higher protection than a previous COVID-19 infection alone.

Materials and methods

Participants

Data for study 2 were collected online during the COVID-19 pandemic from the same university as in study 1. The final

sample in this study consisted of 185 respondents between 18 and 50 years ($M_{\text{age}} = 19.70$, $SD = 3.96$), with a gender breakdown of 68.0% women, 31.1% men, and 0.9% “other.” The overall racial and ethnic breakdown of the sample was 47.0% Asian Americans and 53.0% Latinx Americans, which was similar to the distribution seen in study 1. Asian American participants reported significantly higher socioeconomic status than Latinx American participants. The sample included 41 foreign-born and 144 U.S.-born participants, and five participants were international students. All participants in

TABLE 5 Demographic characteristics and descriptives of study variables compared across asian and Latinx samples for study 2 (September 2021–April 2022).

Variables	Race					
	Asian Americans		Latinx Americans		Full Sample	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	19.74	2.11	19.90	3.35	19.74	3.74
SES	5.70 _a	1.52	5.13 _b	1.52	5.40	1.54
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Gender						
Women	48	55.2	65	66.3	113	68.0
Men	33	37.9	33	33.7	66	31.1
Other	6 _a	6.9	0 _b	0.0	6	0.9
Generation status						
1 st	4	4.6	5	5.1	9	4.9
1.5	18 _a	20.7	9 _b	9.2	27	14.6
2 nd	55	63.2	71	72.4	126	68.1
3 rd	4	4.6	8	8.2	12	6.5
4 th or more	3	3.4	3	3.1	6	3.2
Other	3	3.4	2	2.0	5	2.7
Total	87	47.0	98	53.0	185	100

SES, socioeconomic status. SES was from 1 to 10, with higher scores representing higher perceived SES. Subscript letters denotes a subset of race categories whose column proportions or means differ significantly from each other at the 0.05 level.

the final sample resided in the United States during the pandemic and understood written English. A total of five participants were removed from the initial 158 participants for either being younger than 18 years or residing outside the United States. Table 5 lists the study demographic characteristics and descriptive statistics.

Procedures

Participants were again recruited from the same undergraduate psychological participant pool and were compensated course credit for their participation in the study. Those who participated in study 1 were not eligible to participate in study 2. Procedures were similar to those in study 1 (see section 2.1.2 for details).

Measures

Refer to study 1 Measures section for information on everyday racism, internalized racism, and fear of the coronavirus scales.

Race and ethnicity

Specific racial and ethnic backgrounds were assessed as part of the demographic questionnaire, along with age, gender, SES, and generational status. Similar to study 1, these demographic questions were delivered at the end of the online questionnaire to avoid any possible priming effects. In addition, only

monoracial people were included in this study since the main study variables were race-related.

Distress from coronavirus victimization

The Coronavirus Victimization Distress Scale (CVDS) (48) was used to assess levels of distress related to blaming and victimization of the pandemic. This measure was constructed after the launch of study 1 and, thus, was not included in the previous study. The CVDS consists of five items presenting scenarios describing possible victimization connected to the pandemic (e.g., “I have been teased or bullied because someone thought I was infected with the coronavirus”). The participants reported distress from these experiences ranging from 1 (*it never happened*) to 5 (*it happened and upset me quite a bit*). Fisher et al. (48) validated the CVDS using a diverse sample of Latinx and Asian American participants and showed a strong internal reliability of 0.91. Study 2 demonstrated comparable Cronbach's alpha values for Asian Americans ($\alpha = 0.85$), Latinx Americans ($\alpha = 0.74$), and the final sample ($\alpha = 0.81$).

Statistical analyses

Partial correlation analysis along with analysis of variance (ANOVA) of test the demographic characteristics and study variables was used to examine differences among the sample while holding everyday experiences with racism before the pandemic constant (see Table 6). Similar to analyses of study 1, certain demographic characteristics were examined in relation

TABLE 6 Correlations and ANOVA results for demographics and study variables for study 2 controlling for everyday racism before the pandemic.

Variable	Everyday racism	Internalized racism	COVID fear	Victimization distress	Well-being
Partial correlations <i>r</i>					
Age	0.05	−0.04	0.14	−0.05	0.03
SES	−0.04	−0.00	0.06	−0.05	0.28***
Generation status	0.06	0.02	−0.10	−0.12	−0.02
ANOVA <i>F</i>					
Gender	1.92	1.75	11.27 ^{***} _w	0.30	6.02 [*] _m
Race	0.22	1.24	5.15 [*] _a	3.41	1.61

SES, socioeconomic status. SES was from 1 to 10, with higher scores representing higher perceived SES. Generation Status: 1 = 1st generation, 2 = 1.5 generation, 3 = 2nd generation, 4 = 3rd generation, 5 = 4th and higher generation. Gender: subscript m denotes higher mean for men, subscript w denotes higher mean for women. Race: subscript a denotes higher mean for Asian Americans.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

to wellbeing and other moderating variables to determine any potential covariates for further analyses. Study 1 and study 2 identified the same three covariates—gender, generational status, and SES—to control for in the main statistical analyses.

ANCOVAs were conducted on the same main outcome and moderating variables as in study 1: wellbeing, everyday racism, internalized racism, and fear of the coronavirus. Furthermore, we examined distress related to COVID-19 victimization, using the same covariates as in study 1. We used SPSS PROCESS Macro (46) to test whether race moderated the associations between everyday racism, internalized racism, fear of the coronavirus, and distress victimization, and an individual's overall wellbeing.

Study 2 results

The comparison analyses show that Asian and Latinx Americans varied across gender, generational status, and SES, but not age (see Table 2). Considering gender, both Asian and Latinx American samples had more women than men. Regarding SES, Asian Americans still reported substantially higher status than Latinx Americans, although the differences were less than those in study 1. Considering generational status, the Asian American sample had approximately 11% more people reporting a 1.5 status compared with the Latinx American sample. See Table 2 for more detailed demographic characteristics.

Similar to study 1, comparison ANCOVAs indicated Asian and Latinx Americans did not differ significantly on wellbeing. Unlike study 1, there were no racial differences with internalized racism and everyday racism, when controlling for the mentioned covariates. Nevertheless, Asian participants did report more fear of the coronavirus, $F_{(1,152)} = 6.31$, $p = 0.01$, $\eta_p^2 = 0.04$, and distress from coronavirus victimization, $F_{(1,152)} = 4.14$, $p = 0.04$, $\eta_p^2 = 0.03$, than Latinx participants, that is, Asian Americans were comparatively more distressed about

overt discrimination related to COVID-19. Figure 4 depicts the differences between everyday racism, internalized racism, fear of the coronavirus, and victimization distress reported by Asian and those reported by Latinx Americans.

Moderating analyses suggested that race did not significantly moderate the relationships among everyday racism, internalized racism, fear of coronavirus, and wellbeing. Despite that result, race moderated the effect of distress from coronavirus victimization on wellbeing, $F_{(1,184)} = 6.93$, $p = 0.01$, $\eta_p^2 = 0.04$. For the relationship between coronavirus victimization distress and wellbeing, the main independent variable (coronavirus victimization distress) and the moderator (race) accounted for a significant amount of wellbeing variance, $R^2 = 0.16$, $F_{(7,145)} = 3.86$, $p < 0.001$. See Table 7 for more details.

To avoid potential multicollinearity with the interaction term, all primary variables were centered, and an interaction term between the distress of coronavirus victimization and race was created (41). The results revealed a significant moderating effect of race, $\Delta R^2 = 0.03$, $\Delta F_{(1,145)} = 5.35$, $p = 0.02$, on the relationship between coronavirus victimization distress and wellbeing, $b = 1.96$, $t = 2.31$, $p = 0.02$, 95% CI [0.28, 3.63]. A closer examination of the simple slopes showed that higher levels of distress negatively correlated with wellbeing among Latinx Americans, $t = -3.00$, $p = 0.003$, 95% CI [−7.46, −1.53], but Asian Americans did not share those effects. This finding is slightly contradictory to our predictions, given that the relationship was stronger and more significant for Latinx Americans than for Asian Americans. Figure 5 shows the relationship between victimization distress and overall wellbeing as a function of race.

Overall discussion and implications

Undoubtedly, the COVID-19 pandemic—from the beginning to the end—was a psychologically distressing time for many people. To this point, findings from both studies

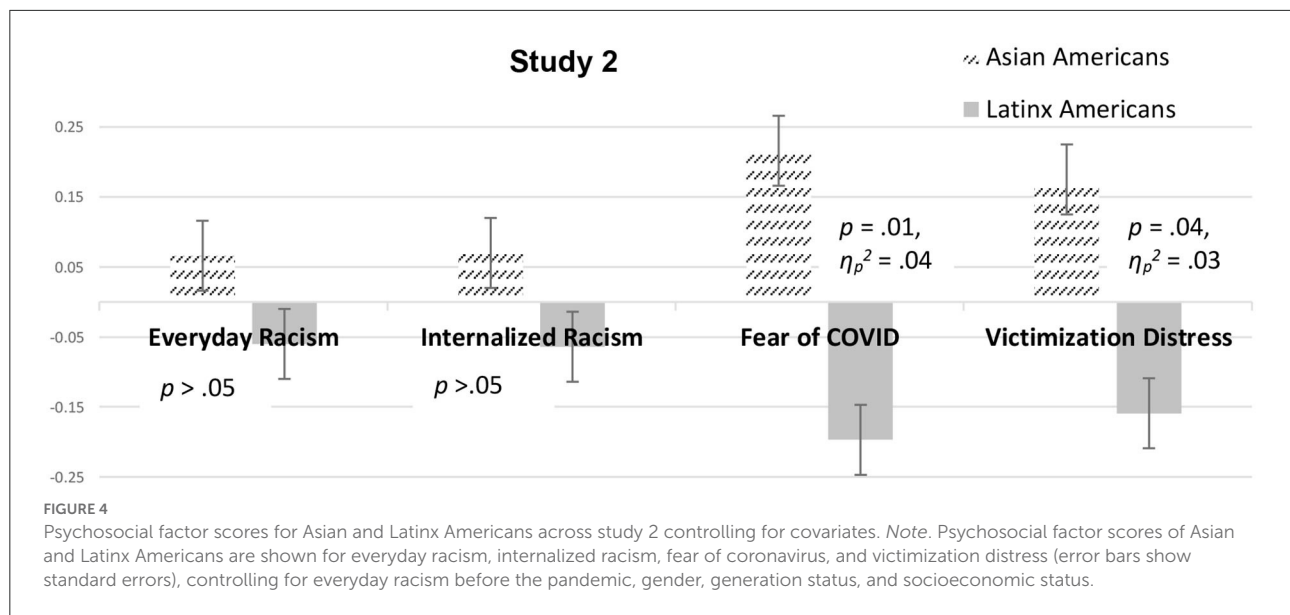


TABLE 7 Moderation results for victimization distress and race (Asian vs. Latinx Americans) with well-being as the outcome and everyday racism before the pandemic, gender, SES, and generation status as covariates for study 2.

Effect	<i>t</i>	<i>F</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
Constant	4.08		0.48	−14.75	31.189
Covariates					
Gender	0.31		0.76	−0.58	6.72
SES	3.24**		0.00	2.28	5.04
Generation status	−0.56		0.58	−1.17	3.51
Everyday racism before the pandemic	−0.58		0.56	−0.15	2.50
Main effects					
Victimization distress	−2.72		0.01	0.08	0.01
Race (Asian vs. Latinx Americans)	−2.47		0.01	0.86	0.00
Interaction					
Victimization distress X race		5.35*	0.02		
Asian Americans	−0.71		0.20	−2.19	1.03
Latinx Americans	−3.00**		0.00	−7.46	−1.53
Model summary	<i>R</i> ²	<i>F</i>	<i>p</i>	<i>df</i> ₁	<i>df</i> ₂
	0.16	3.86	0.00	7	145

Gender: 1 = woman, 2 = man. SES = socioeconomic status. SES was from 1–10, with higher scores representing higher perceived SES. Generation Status: 1 = 1st generation, 2 = 1.5 generation, 3 = 2nd generation, 4 = 3rd generation, 5 = 4th and higher generation. Race: 1 = Asian American, 0 = Latinx American.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

demonstrate that Asian and Latinx Americans experienced reduced levels of wellbeing during the recent pandemic; however, no significant racial differences in wellbeing were observed between the groups. Nevertheless, it is worth noting that nearly half of the Asian and Latinx Americans from the samples reported reduced levels of wellbeing in general, with almost one in six meeting the cutoff for clinical depression in study 1 and almost one in 10 in study 2. Despite the similarities between Asian and Latinx Americans, their reduced levels of

wellbeing, which suggested probable depression in many cases, were nearly two times higher than the rates seen in the general population before the pandemic.

This sudden drop in wellbeing and rise in depressive rates warrant further attention from U.S. officials since it seems to indicate a growing public health concern for Asian Americans, as well as Latinx Americans. Another point worth noting is that for Asian Americans, rates of reduced wellbeing were climbing between the time frames of the studies (43.8–49%),

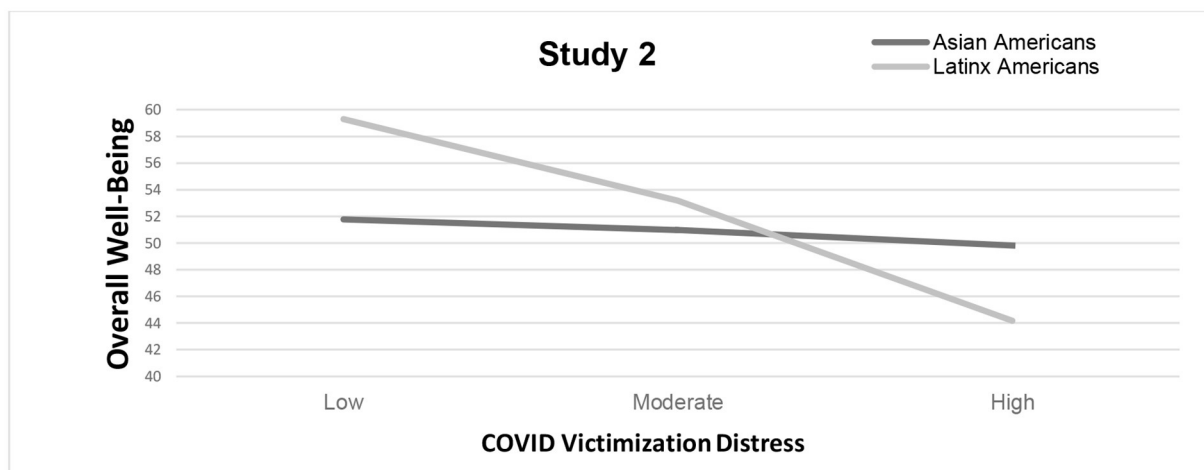


FIGURE 5

Changes in overall well-being as a function of race and everyday racism for study 2 (September 2021–April 2022). *Note.* Results suggest race as a significant moderator ($p < 0.05$) for the relationship between COVID-19 victimization distress and overall well-being. Latinx Americans experienced lower overall well-being as a function of COVID-19 victimization distress compared to Asian Americans.

whereas for Latinx Americans, rates of reduced wellbeing were lowering (52.6–40.8%). This considerable reduction in wellbeing, especially if left unaddressed, might increase Asian Americans' susceptibility to psychological disorders and problematic behaviors, such as depression and addictions. In turn, Asian Americans might seek out healthcare services at a greater frequency and at much higher rates than before the pandemic. Barriers to cultural competent services (e.g., language assistance programs) may need additional improvements in regard to assisting Asian Americans in dealing with the aftermath of the pandemic.

Furthermore, the fast and attention-grabbing violence toward Asian Americans that was widely publicized during the pandemic, corroborating the findings of study 1 that indicated a significant upward shift in everyday racism for Asian Americans as compared with Latinx Americans. Asian Americans also reported relatively higher levels of internalized racism throughout the duration of the studies. The exponential uptick of hate crimes, or fast violence, against Asian Americans during the pandemic perhaps spilled over into the racism-related slow violence reported by the participants in both the studies, based on their everyday exchanges, internalized hate, and/or victimization distress. In addition, moderating analyses showed that an individual's race was a significant moderator for the relationship between everyday racism and overall wellbeing. Not only was there an upward shift in experiences of everyday racism but also this effect seemed more negatively linked to Asian Americans' levels of wellbeing. This general trend in both the studies highlights the unique burden that racism places on many people of color. Latinx Americans may have not experienced more distress from COVID-19-related victimization, but Latinx

Americans did report more distress and lower wellbeing than Asian Americans.

In response the racial inequities during the pandemic, the APA issued a call for an increase in training, awareness, research, and the creation of clinical tools that are culturally adapted for people of color (49, 50). One way the APA Task Force on Race and Ethnicity (49) suggested that psychologists should manage these sensitive issues through culture-specific treatments and other indigenous healing approaches (e.g., healing circles). Researchers premise the use of healing circles around the need to provide safer spaces for people of color to learn positive coping skills and process stress-related experiences of racism. Limited research suggests that those individuals who take part in healing circles may feel more confident and have more skills to cope with future stressful experiences of racism, especially in connection to racism (51). Other traditional approaches for treating people of color can also include culturally adapted group psychotherapy sessions that integrate specific recognition and processing of racism-related experiences, such as microaggressions (52). Researchers have found that psychotherapy that centers on a multiculturally competent framework improves the working alliance and clinical outcomes of Asian and Latinx Americans. Past scholarly literature on this topic suggests that integrating client-defined group membership and intersecting identities are critically important for therapeutic outcomes (53, 54). These findings would suggest that during a time in which Asian Americans are suffering due to increased levels of experienced and internalized racism, coronavirus distress, and victimization, integrating experiences of racism through a multicultural competent lens into group psychotherapy or healing circles may prove to be an invaluable resource for the Asian American

community to heal from the devastating effects of the pandemic-associated racism.

In comparison to Latinx Americans, Asian Americans reported more worry about the coronavirus throughout the pandemic, particularly in relation to the fear of infection. This increase in generalized fear and anxiety, along with navigating the blindsiding shift in racism, plausibly made many Asian Americans more susceptible to coronavirus infections and other ailments. In 2020, one in seven Asian American deaths were related to COVID-19, and Asian Americans were overrepresented in mortality rates compared with non-Hispanic whites (55). Emerging statistics show that Asian Americans who were hospitalized also presented with more severe infections and were more likely to die from the coronavirus than non-Hispanic whites. Interestingly, moderation results from study 1 indicated that one's fear severity had more of a negative effect on the overall wellbeing of Latinx Americans, but not Asian Americans, that is, Latinx Americans who had a more severe fear of the coronavirus had significantly lower wellbeing. Although this finding is slightly contrary to our predictions, the overall results suggest fear and anxiety of the coronavirus are important when considering people of color's wellbeing.

Differences in racism-related factors were not significant when the COVID-19 vaccines were widely available during study 2. As predicted, Asian Americans reported more distress from coronavirus victimization than Latinx Americans. Much of the distress Asian Americans experienced appeared to be more related to being blamed for the coronavirus outbreak. Overall, though, these results suggest that the psychological impact of COVID-19 might be, by comparison, more robust for Asian Americans; however, Latinx Americans who experience more fear and blame for the coronavirus experienced lower levels of wellbeing. During the later months of the pandemic, major efforts were launched to stop hate against Asian American communities in the United States (i.e., #StopAAPIHate and Biden's Hate Crimes Bill). Perhaps these public gestures to stop racism against Asian Americans in the United States also mitigated some of the everyday and internalized racism effects, whereas Latinx Americans did not experience the same large-scale efforts during the pandemic.

Limitations and conclusions

We examined the factors related to psychosocial experiences with racism among Asian Americans and the coronavirus during the critical months of the pandemic as compared with Latinx Americans. The results from these studies should be interpreted considering research limitations. First, the data were collected as online questionnaires from two college samples at the same university. Therefore, generalizability interpretations of our findings might be limited to an emerging

adulthood experience, particularly young people completing an undergraduate degree. Future studies should assess other demographic groups since many effects of pandemic may continue to linger throughout the United States. In addition, our studies were cross-sectional designs examining separate samples at different time points of the pandemic. These studies only considered associations between psychosocial factors and wellbeing, so future longitudinal methodologies will help clarify the directionality of these effects.

In sum, the takeaway message from the current findings is that Asian Americans have experienced and still are experiencing multi-faceted forms of racism. During the beginning months of the pandemic, Asian Americans in our samples reported significantly more experiences with the slow violence of racism than Latinx Americans; and while some people may shutter at the very thought of calling words a form of violence, this term is meant to capture an important truth: hateful words *can* be weapons—ones that often inflict emotional harm and pain far beyond what the human eye is able to observe. In our samples, we were able to glimpse some of these negative effects that racist and xenophobic words and acts can have on Asian American people, many of whom experienced more consistent fear and distress during the time of the pandemic. Lately, it seems most instances of fast violence against Asian Americans might have, for a time, been mitigated, but the unseen effects of racism will likely endure for many people of color.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Institutional Review Board. The patients/participants provided their written informed consent to participate in this study.

Author contributions

GW-P was lead author and contributed to the conception, design, organized the database, performed statistical analyses, and wrote the draft of the manuscript. AB contributed to the conception and design of the study, and organized the database. AK and MS wrote sections of the manuscript. All authors

contributed to the manuscript revision, read, and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships

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Unpacking the root causes of gambling in the Asian community: Contesting the myth of the Asian gambling culture

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Introduction: Problem gambling is a public health issue both in the United States and internationally and can lead to mental health and socioeconomic concerns for individuals, families, and communities. Large epidemiological studies on problem gambling have neglected to include working-class, immigrant Asian Americans, who are at higher risk for problem gambling. The lack of data on Asian American gambling may explain a subsequent lack of culturally and linguistically appropriate treatment and prevention services. Additionally, the invisibility of Asian American data in published literature has helped to perpetuate a commonly held myth of an Asian gambling culture. This stereotype of the “Asian gambler” is a form of anti-Asian racism which serves to ignore and minimize the root causes of problem gambling in the Asian American community.

Methods: Utilizing a community-based participatory research approach, 40 interviews were conducted with the local Khmer ($n = 12$), Chinese ($n = 20$), Korean ($n = 3$), and Vietnamese ($n = 5$) immigrant communities in the Greater Boston region to assess how problem gambling manifests in the local Asian community. Interviews were conducted in language by bilingual/bicultural community fieldworkers experienced in serving their respective communities. Flyers and social media were used to recruit participants. The interviews were coded into themes which provided a better understanding of the patterns of systemic issues contributing to problem gambling in the Asian American community.

Results: Interviewees provided insights into the underlying issues of poverty and social and cultural loss due to immigration as root causes for problem gambling in the Asian American community. The interviews indicate that many individuals in these Asian immigrant communities, who are striving to make a living off low-wage and stressful jobs, struggle to integrate

into American society. They often lack culturally appropriate and accessible social and recreational activities, a void that casinos capitalize on through targeted behaviors.

Discussion: Research must address the social and structural barriers in the Asian American communities rather than relying on the “Asian gambler” stereotype and assuming interventions for a general American problem gambler will work for Asian immigrants. The research points to a need for gambling interventions and services that are centered on lived experiences.

KEYWORDS

gambling, anti-Asian racism, community-based organizations, culturally and linguistically appropriate services, health equity, community fieldworkers, community-based participatory research (CBPR), integration

Introduction

Problem gambling is a pervasive social, economic, and public health issue in the Asian immigrant working-class communities. Amongst the general population, problem gambling is associated with financial harms, relationship disruption, family and intimate partner violence, and emotional and psychological distress (1–3). Beyond these potential harms, current research indicates social and economic impacts of problem gambling on Asian American communities and families (3–7). A growing body of literature suggests that the Asian community is at greater risk for problem gambling than the general public (8–10). In a US national survey conducted from 2001 to 2002, data showed that while only 4.4% of the sample population were Asian, 7.2% of the pathological gamblers surveyed were Asian, indicating that Asians were at higher risk for gambling disorders (11).

Despite the seriousness of problem gambling in Asian communities, large epidemiological studies on problem gambling in the US often neglect these communities, failing to capture the realities Asian immigrants are facing. Specifically for Massachusetts, a statewide study on gambling was unable to capture the Asian American demographic due to having too small a sample size (12). Most large studies are conducted in English, which fails to reach limited-English speaking and often lower-income Asians at higher risk for problem gambling. The lack of data inhibits the allocation of culturally and linguistically appropriate treatment and prevention services to address problem gambling in the Asian communities in the US. The invisibility of Asians in the data is a form of structural racism that leads to underserved communities and incomplete explanations of the issues that Asian communities face in the US.

In the absence of definitive research, the common myth of an “Asian gambling culture” has often been used as the driving explanation for Asian gambling which overshadows systemic and structural root causes of problem gambling in

the Asian community. The popular stereotype is pervasive in the media and even a misconception found within the Asian community itself. For example, in 2011, the New York Times released an article which stated, “culture is one reason gambling is so popular among Asian-Americans [...] Asian-Americans, carrying on a tradition from their homelands, embrace games of chance and skill like mah-jongg [...] Las Vegas has long counted on a strong Asian clientele” (13). Cultural conceptions of luck or fate are often brought up as social norms that influence Asian gamblers (14–16). While these are societal beliefs in many Asian cultures, focusing solely on these factors overshadows other important root causes of problem gambling in the Asian community. The media especially has highlighted or sensationalized these cultural elements often titling articles or using the first few sentences to drive home the idea that Asians Americans gambling addiction is rooted in culture (17). Additionally, films, popular culture, and even casinos perpetuate the “Asian gambling stereotype” through their portrayals of Asian gamblers (18, 19). While academic research has made strides toward critiquing and countering this myth (20–22), the pervasiveness of the Asian gambler continues to infiltrate research and even casual conversation around the topic. The Asian gambler stereotype simplifies a complex issue and neglects to consider systemic problems related to poverty, immigration, and cultural integration. By focusing attention on the Asian gambler stereotype, this complex issue cannot be fully understood and we fail to properly protect Asian communities from gambling related harms. Complicating these issues, gambling addiction and problem gambling are especially stigmatized in Asian communities where the concept of face is particularly important (21, 23–25).

Community-based participatory research (CBPR) and community-engaged research (CER) have tried to address these data gaps by actively working with community-based organizations (CBOs) to research and investigate important issues in the community. CER is a process that involves the community as partners in research including the development

of research questions, collection of data and subsequent analysis, as well as the dissemination of the research (26, 27). Through their involvement, these community partners provide expertise on their community and bring their own lived experience. CER has grown in recognition as a process that can help scientific discoveries lead to improved outcomes, especially for populations historically underrepresented in public health research. By utilizing the CER process, the knowledge and experience of the community aids in ensuring research priorities are responsive to the needs of the community and allows for the development of culturally sensitive practices and measures (28–30). Utilizing CBPR and CER focuses on the value and importance of CBOs in research.

Asian CARES (Center for Addressing Research, Education, and Services) is a coalition of ethnic specific CBOs in the Greater Boston area formed to address gaps in research and services addressing problem gambling and other public health challenges in the Asian¹ communities. Over the years, and in the wake of the COVID-19 pandemic and rising anti-Asian racism (31–37), these agencies have seen an increasing trend of families seeking aid for financial problems stemming from problem gambling.

Asian CARES research was guided by CER and used these principles throughout the research process. The community-based partner organizations are multi-service agencies that offer a variety of services from childcare and English as a second language classes to workforce development and youth programming. These CBOs serve as trusted entities within their ethnic communities serving as a point of first contact between community members in need and mainstream organizations. As ethnic serving social service agencies, these partners help them navigate systems such as education, healthcare, and law.

Previous research on problem gambling in the Asian community of Boston's Chinatown was conducted by Dr. Carolyn Wong from the Institute of Asian American Studies at UMass Boston. The report emphasized the responses of 23 participants from Boston Chinatown who spoke about the protective and risk factors associated with problem gambling among the Chinese population (22). Importantly, Dr. Wong began the work of contesting the Asian gambler stereotype concerning the Chinese community, centering the issue of problem gambling within a deeper context than the racist focus on Chinese culture.

The research of this study builds upon Dr. Wong's findings attempting to further untangle the issue of problem gambling, specifically focused on expanding the research to other Asian ethnicities and delving deeper into problem gambling in the Asian community. Particularly, the objective of this study is to

focus on community perceptions of gambling within each ethnic community rather than specific experiences of individuals with gambling problems.

Materials and methods

Community-engaged research coalition

The Asian CARES coalition served as the research team and advisory board for the study. These members were composed of multi-disciplinary partners including four CBO directors from our partner organizations, three researchers from Tufts University, and eighteen trusted community bilingual/bicultural fieldworkers. Each member of the research team played a critical role in the research. The researchers had expertise in CER in the Asian community. The community partners included Boston Chinatown Neighborhood Center, Asian Task Force Against Domestic Violence, Cambodian Mutual Assistance Association of Greater Lowell, and the Vietnamese American Initiative for Development.

The coalition met monthly, starting in late 2019, to guide the research and discuss findings. During these meetings, they contributed to the conception and implementation of the research design, provided important feedback about relevancy and wording of research questions to ensure that they were asked in a culturally-relevant way and tailored to the ethnic populations. Coalition meetings allowed researchers to gain a deeper understanding of each community and the issues they were dealing with. Considering the COVID-19 pandemic and subsequent rising racial tension, the meetings also served as a place for community partners to share what they were hearing from their constituents. Beyond serving as an advisory board for the research, the coalition also strove to amplify the issue of problem gambling in the Asian community.

Instruments

The semi-structured interview protocol was developed using qualitative methods to determine “how” and “why” questions related to problem gambling (38–41). The interview guide (see [Supplementary material](#)) was broken into four sections which included questions on (1) Perceptions of gambling (2) Treatment options and solutions in the community (3) Coalition organizations (4) Demographics. The questions around perceptions of gambling ranged from more general questions about which types of gambling the participants felt was more prevalent to questions on their thoughts on gambling, gambling in their ethnic communities, and the impacts of gambling on families and their communities. Questions around treatment and solutions were designed to understand both the participants' knowledge of treatment options and their opinions on what they felt would be helpful

¹ Henceforth, the term “Asian” refers to Asians living in the United States unless specified otherwise. Asian(s) is used rather than Asian American(s) as many of the participants in our study are first generation immigrants who do not consider themselves as Asian American. Rather, these individuals view themselves as Asians who are in the US.

for their specific ethnic communities. While the questions were designed to obtain an understanding of gambling, no one was asked to name or identify anyone they know who gambles. The demographic questions were designed to invoke non-identifying data and some questions were made optional to ensure privacy. While participants were asked whether they were an immigrant and their length of time in the US, emphasis was placed on ensuring participants did not need to disclose their immigration status or whether they were legal immigrants.

All instruments, including community fieldworker training materials, recruitment materials, the interview protocol, and the consent script were approved by the Tufts University IRB. Instruments were translated into several Asian languages including Chinese, Vietnamese, Khmer, and Korean.

Training of fieldworkers

Community fieldworkers, recruited from the bilingual/bicultural staff of the partner agencies, were trained to conduct the interviews with participants. These community fieldworkers have already built trusting relationships with community members and were therefore the ideal agents to conduct interviews with their community. In light of the stigma of problem gambling within the community, it was important to ensure participants felt comfortable with the interviewer. Other community engaged research has used community fieldworkers for similar reasons (42). Trainings and interview protocols were provided to the community fieldworkers to guide their discussions.

Two IRB-approved research trainings were developed and administered to the community fieldworkers. The first training covered human subjects and the ethical obligations of the community fieldworkers, as covered by the human subject's requirement of the Collaborative Institutional Training Initiative training. The second training covered interviewing techniques. Trainings took place remotely via Zoom.

Community fieldworkers were provided with materials to guide the interview process including a step-by-step interview process checklist, informed consent forms, informed consent documentation logs, and the interview question guidelines. The interview protocol was used to guide the interview process. Community fieldworkers were trained to adapt to the situation of the interview and probe participants to elaborate on their answers.

To ensure consistency of data collection across ethnic groups, a weekly meeting was held with all the community fieldworkers during the data collection phase. The supervision meetings allowed the researchers to monitor recruitment and troubleshoot any emerging problems during the interview process.

Recruitment methods

Outreach was done through the Asian CARES partner organizations. The recruitment process resulted in a convenience sample as those recruited were from the ethnic groups served by the current coalition partners. Translation of recruitment documents into these four languages was due to Chinese, Vietnamese, Khmer, and Korean ethnicities representing some of the larger Asian immigrant communities in the Greater Boston area. While recruitment was attempted with other Asian ethnic groups, there was little to no participant response (see Table 1).

Recruitment of interview participants mainly relied on distribution of a standard recruitment flyer both in physical distribution and through social media, but a recruitment script was also developed for more direct outreach through email or verbal contact. Response to recruitment was rapid for many agencies and required a vetting process. Recruitment focused on adult (over the age of eighteen) community members who had a family member, neighbor, or co-worker who gambled, and the participant was able to discuss their observations and experiences with gambling behavior. Gambling was not an inclusion or exclusion criteria for this study and many participants had some personal gambling experience. As such, no mechanisms were used to determine the problem gambling severity status of the participant. However, self-identifying problem gamblers were excluded from the study as the community fieldworkers did not have the qualifications to conduct research with such a high-risk group. Additionally, participants were screened for their geographic location and excluded if they were beyond the catchment area for the study. Focusing on community members and their experiences allowed a broader view of gambling in the Asian community as a whole and allowed a clearer understanding of perceptions of gambling within the community.

A standard, recruitment flyer was developed and then translated into several Asian languages including Chinese, Vietnamese, Khmer, and Korean.

The recruitment flyer was distributed by community partners and the community fieldworkers as part of their normal contact with clients through channels like program emails and social media posts. While some participants were recruited through direct contact distribution, due to the need for social distancing, participants were mainly recruited by indirect contact. Mainstream American social media platforms such as Facebook and Instagram were used; however, agencies also chose to use community group text channels and more Asian specific social media platforms such as WeChat. Social media is a common way for the community agencies to communicate with their clients and constituents which the community partners emphasized as an important tool to reach a broader range of stakeholders.

Interview process

From February to April of 2021, the community fieldworkers conducted forty interviews of residents from the Khmer, Chinese, Korean, and Vietnamese immigrant communities in the Greater Boston area to assess how problem gambling manifests in their communities. These interviews were conducted in language by bilingual/bicultural community field workers experienced in serving their respective communities. Because of the increased strain the community fieldworkers were experiencing due to supporting the Asian community through the racial tensions due to the COVID-19 pandemic and the shootings in Atlanta (43–45), the number of interviews was limited to forty. Forty interviews were deemed a reasonable number to expect of the already overstretched workforce and forty within the bounds of adequate saturation for qualitative interviewing (46–49).

Semi-structured interviews took place through Zoom or the phone and lasted between 45 and 60 min. Participants received a \$50 gift card for their participation. Interviews were audio and/or video recorded with permission. Some participants elected to not be recorded, in which case the community fieldworker took notes during the interview. Community fieldworkers utilized the interview protocol to guide their interview process. When possible, interviews were conducted in pairs with one fieldworker taking the lead to conduct the interview and another taking notes. After each interview recordings were reviewed by the community fieldworkers and notes were revised to verify accuracy. Interviews were conducted in the language the participant felt most comfortable with. The community fieldworkers provided English translations of the notes for the researchers to analyze.

To ensure uniformity and consistency of the data collected across interviews, the primary investigator, who has expertise in qualitative interviewing, reviewed the notes from each community fieldworker's first interview. Additionally, when reviewing notes, the primary investigator was able to evaluate the interview questions and adjust based on cultural understandings. For example, the concept of boredom became apparent in early interviews and the interview guide was adjusted to account for a need to probe around what "boredom" meant. The primary investigator also took time to ensure fieldworkers were probing interview participants where needed. After the notes were taken and approved, the audio and/or video recordings were destroyed to ensure the privacy of the interview participants.

Data analysis interview coding

The interviews were coded and developed into themes that described patterns of systemic issues contributing to problem

TABLE 1 Demographics information of the interview participants.

Demographic variables	Number	Percent
Race/Ethnicity	N = 35	
Chinese	15	43%
Chinese Vietnamese	1	3%
Filipino	1	3%
Khmer	10	29%
Korean	3	9%
Taiwanese	1	3%
Vietnamese	4	11%
Gender	N = 33	
Male	9	27%
Female	24	73%
Education	N = 34	
Grade school	2	6%
High school or equivalent	15	44%
Associates degree	1	3%
Bachelor's degree	11	32%
Master's degree or professional degree	5	15%
Primary language	N = 34	
Cantonese	5	15%
English	8	24%
Khmer	7	21%
Korean	2	6%
Mandarin	10	29%
Vietnamese	4	12%
Other (Tagalog)	1	3%
English proficiency	N = 33	
Fluent	8	24%
High	3	9%
Medium	8	24%
Limited	14	42%
None	0	0%
Age	N = 39	
Under 20	1	3%
20–29	7	18%
30–39	12	31%
40–49	10	26%
50–59	7	18%
60–69	1	3%
70+	1	3%
Migrated	N = 37	
Yes	34	92%
No	3	8%

Participants could choose to decline questions they were not comfortable answering. Some participants were bilingual and chose more than one language as their primary language. For analysis purposes, the Taiwanese identifying participant was included in the Chinese group and the Chinese Vietnamese identifying participant was included in the Vietnamese group.

gambling in the Asian community. Data analysis drew upon elements of thematic analysis and the framework method (50–52). Coding and data analysis was performed by two researchers. Before analysis, a list of priori codes was developed based on research literature and used as the basis for a codebook. The researchers initially coded independently for two rounds before meeting to discuss their findings and determine main codes. The first round of coding was done using these prior deductive codes to determine consistencies between the research findings and the literature. A second round of coding focused on inductive codes and narratives in the interviews which were unique to the Asian community (53).

The codes were then developed into themes. Attention was paid to themes related to understanding the effects of gambling in the Asian community. The themes served as primary building blocks for understanding patterns of systemic issues contributing to gambling and the ways these systemic issues manifest in the Asian community (54–59). Preliminary analysis was presented to the community fieldworkers for their feedback and to ensure researcher interpretation was accurate to the data collected.

Results

Interviewees provided insights into the underlying issues of poverty and social and cultural loss due to immigration as root causes for problem gambling in the Asian community. The interviews indicate that many individuals in these Asian immigrant communities were striving to make a living off low wage and stressful jobs and struggled to integrate into American society. They often lacked culturally appropriate and accessible social and recreational activities, a void that casinos capitalize on through targeted behaviors.

Table 1 details the demographic information of the forty interview participants. The majority of participants were immigrants (92%) who identified as having a medium English proficiency or less (66%). Of these participants, 50% had a high school diploma or less and 52% worked in the services industry. Interviews spanned five ethnic groups – Chinese (46%), Khmer (29%), Vietnamese (14%), Korean (9%), and Filipino (3%). All interviewees drew from direct experiences of family members, friends, co-workers, and neighbors who gamble.

Prominent themes (see Table 2) were found through the data analysis process involving systemic issues which contributed to gambling in the Asian community. These themes include cultural and linguistic barriers, poverty, stress, desperation, and the influence of casinos and advertising.

Poverty, stress, and desperation

Poverty emerged as an important theme underlying what drives many to gamble. The theme was particularly salient in

relation to the ways in which Asian immigrant communities are struggling to make a living off low wage and stressful jobs. These low-wage jobs were described by participants as difficult jobs where they cannot find meaning in the work they do. One participant speculated that there was “nowhere else to go other than work, they are unable to find other ways to make their life meaningful.” Participants connected poverty and being unable to make a decent living working low-wage jobs with stress, worsening mental health, and turning to gambling as both a stress reliever and a hopeful solution to their financial problems.

Gambling to earn money

The concept of gambling to earn money was frequently brought up by participants, with 58% mentioning gambling to earn quick or easy money. Alternatively, 18% of participants mentioned improving family finances as a reason for gambling. These two motivations were distinctly separated by participants, but both stem from a feeling of desperation and a desire to supplement income. An interviewee stated that gambling represents a “hope that they can have freedom of money” and was rooted in a desire to escape poverty. Gambling represented a dream of a better future.

Gambling to relieve stress

Gambling to relieve stress was a theme brought up by 23% of participants, all of whom were Chinese and Khmer. The concept is particularly important as stress relief was linked to work pressure. Participants described heavy workloads and long work hours that immigrants face in the US. Gambling became an outlet for stress. One Chinese respondent described the bleak situation of some immigrant restaurant workers who “work 12 h usually, come back home very late at night, such as at 11 p.m., and then they want to relax. It is year after year, day after day.” The participant went on to explain that casinos were one of the only relaxing activities available to restaurant workers who cannot find other recreational opportunities that are culturally and linguistically appropriate.

Depression

When discussing the stressors related to low-wage work, integration, and the challenges to make a living wage as an immigrant, participants started to talk about the connection between depression and gambling. Participants described the cycle of gambling where one becomes caught continually losing and accruing debt which leads to stress, depression, and desperation. In this state of desperation, more gambling can appear as the only viable way out. One participant spoke of depression and stated “Depression, when people are poor, they tend to have no way of getting out of it. They try to find the easiest way, which is gambling.” Others described the connection between worsening mental health as a gambler

TABLE 2 Participants identified reasons why they thought Asians gamble.

Reasons to gamble	Total participants		Participants responses by ethnicity							
	Count	Percent	Vietnamese		Khmer		Chinese		Korean	
			Count	Percent	Count	Percent	Count	Percent	Count	Percent
Social aspects	26	65%	3	12%	8	31%	13	50%	2	8%
Stress relief	9	23%	0	0%	2	22%	7	78%	0	0%
Obsession/greed	7	18%	2	29%	3	43%	1	14%	1	14%
Boredom	16	40%	1	6%	5	31%	10	63%	0	0%
No entertainment options	10	25%	0	0%	0	0%	10	100%	0	0%
Recreation	5	13%	1	20%	3	60%	0	0%	1	20%
Earn money/win money	23	58%	3	13%	10	43%	8	35%	2	9%
Improve family finance	7	18%	1	14%	2	29%	4	57%	0	0%
Social isolation	11	28%	1	9%	2	18%	8	73%	0	0%
Escape reality	6	15%	1	17%	1	17%	3	50%	1	17%

Reasons for gambling were coded and developed into the following themes. Each theme was analyzed in terms of the total participant count and then broken down into each ethnicity associated with that theme.

continues to gamble and lose money. A participant summed up the specific struggle of immigrants, “you have to borrow money, you can’t pay the rent, you feel stressed, and you feel even more depressed.”

Challenges to integrate into US society

The issue of cultural and linguistic barriers was apparent in several subthemes during the interviews. Particularly, language serves as a large barrier for integration and potential enjoyment of American recreational pastimes (movies, bars, theaters, sporting events, concerts, etc). One participant described a reluctance to go to a bar to relieve stress after work as the experience was not something they found relaxing and enjoyable, stating: “it is not easy to go to a bar to have a drink and find ways to entertain when they cannot speak the language.” Language barriers mean that something as simple as going to a bar or attending a movie are not accessible for limited English-speaking Asians.

Beyond simply linguistic barriers, the systemic issues related to culture and language and their relation to root causes of problem gambling resulted in the following themes:

Social isolation

The theme of social isolation was related to the issue of difficulty for immigrants to integrate into American society. Cultural and linguistic barriers serve as an isolating factor and 28% of participants indicated social isolation as a reason for gambling. Most of the interviewees (92%) were immigrants, for whom English was not their first language. Loneliness was a common word used by participants to describe reasons for

gambling. One interviewee said gamblers “may feel lonely and [it is] hard to work in a foreign country” while another stated, gamblers “are alone, and unable to integrate into American society.” The same participant noted that “even [if] you don’t speak English you can gamble.”

Additionally, 65% of participants mentioned the social aspect of gambling. Many immigrants leave their families behind in their countries of origin. One interviewee said that “People who don’t have a family here will gamble [...] when gambling there are many people chatting, contacting them.” Participants claimed that they would go to the casino as an activity with friends and that many people from the Asian community go to the casino.

Boredom

Though the concept boredom is related to social isolation, the continual use of the phrase prompted a deeper investigation. “Boredom” was a phrase used by 40% of participants and was particularly expressed in the Chinese and Khmer ethnic communities. When community fieldworkers probed participants to understand what boredom means, it became apparent that boredom was linked to the challenges with assimilating into American society. While on the surface, the theme of boredom could superficially be viewed as feeling like there is nothing else to do, the concept is strongly linked with the theme of a lack of culturally appropriate social outlets. Boredom stems from the challenge of integration and what one participant described as being “part of the life cycle of being an immigrant.” When asked to describe what they meant by the word boredom, one participant mentioned that the root of boredom was really the challenge of integrating into American culture. One participant wondered if “maybe

TABLE 3 Participants were asked about their thoughts and experiences on gambling in their communities and potential triggers or facilitators to gambling.

Triggers/ facilitators for gambling	Total participants		Participants responses by ethnicity							
	Count	Percent	Vietnamese		Khmer		Chinese		Korean	
			Count	Percent	Count	Percent	Count	Percent	Count	Percent
Targeted advertising	17	43%	3	18%	2	12%	10	59%	2	12%
Casino environment	8	20%	1	13%	1	13%	5	63%	1	13%
Busing practices	34	85%	4	12%	10	29%	18	53%	2	6%
Entertainment turns to addiction	20	50%	2	10%	9	45%	7	35%	2	10%

The following themes were developed based on their responses. Each theme was analyzed in terms of the total participant count and then broken down into each ethnicity associated with that theme.

gambling is a comfort” to immigrants who are feeling lonely in a foreign country. Another participant described the loneliness of being an immigrant: “Maybe it’s because living here, they’re so far from their homeland [...] But maybe it’s also living here, feeling so isolated and far from home...” Boredom reflects the loneliness and longing of a population who has left behind what they know and are struggling to adapt to foreign surroundings.

Lack of culturally appropriate social spaces

When discussing boredom, 25% of participants began to discuss the lack of social spaces in which they feel comfortable, causing community members to turn to gambling as an alternative. It should be noted that all the participants who mentioned lack of social spaces were Chinese respondents. The Chinese participants explained that in their native countries there are many entertainment options such as singing, karaoke, concerts, clubs, and other recreational opportunities (e.g., ping-pong or dancing). As immigrants in the US, they find it difficult to find activities that they are familiar with or activities that are in their language.

Relation of gambling to casinos

Participants largely associated gambling with casinos when talking about gambling and gambling in their respective ethnic communities. Most respondents (78%) listed casino games as a type of gambling. When asked where gambling occurred, 83% of interviewees stated in casinos. The connection that participants felt between the casino and gambling is related to themes around activities promulgated by the casino.

Use of casino buses

Over 80% of interviewees were aware of buses in their communities which would bring individuals to the casino (see [Table 3](#)). One Khmer participant described the buses as “giv[ing]

people the illusion that they are VIPS” providing great service and transporting people to a location where others spoke their language. In the Greater Boston area, casino buses are commonly stationed at known busy locations in local Asian ethnic enclaves such as Boston’s Chinatown, Quincy, Dorchester, and Malden. Some casino buses to Boston’s Chinatown run as frequently as every half hour and throughout the night.

Some participants expressed what they felt was the strategic nature of the bus schedules. For example, one participant spoke of the buses being available once restaurant workers got off work. Considering the dearth of available recreation activities available to off work restaurant workers, the casino buses offered an easy and low-cost entertainment option for them to relieve stress. One participant spoke of friends in the restaurant industry who would get off a long stressful day of work, hop onto a bus to the casino, and then return on the bus before their next shift living a cycle of work to the casino and back.

Asian friendly casino environment

Many participants spoke to the environment within the casinos catering to an Asian clientele which made them feel welcome and comfortable. Two themes associated with the Asian friendly environment which were mentioned across all ethnicities were targeted and seductive advertising toward the Asian community (43%) and the ways in which the environment of the casino was designed to be particularly appealing to Asians (20%). Participants mentioned using free food and discounts to entice them, coupons were usually associated with taking the casino bus. The available food caters to Asian ethnicities and tastes. Several participants mentioned concerts, with one participant saying “the casino invites stars or singers from Hong Kong and Taiwan to sing” which draws in crowds. Beyond special events and activities, casinos provide a welcoming and Asian friendly environment. Participants mentioned croupiers and other casino employees who speak Asian languages (i.e., – Vietnamese, Mandarin, or Cantonese) providing a welcoming environment that immigrants may not find elsewhere. One interviewee mentioned that the “drivers and waiters who [work

at] the casino make people feel comfortable and make you feel close to them.”

Participants described the role casinos played in encouraging Asians to come, gamble, and keep gambling. Participants from every ethnic group describe instances of free food vouchers which drew friends and family into casinos. Participants spoke to the temptation of the entertainment offered and the advertisements and offers which allow for free food and discount coupons which were described as “seduction.” From the perspective of the participants, they are being called or compelled to gamble rather than actively seeking the activity.

Discussion

Integration stress

The interviews illuminate systemic issues related to gambling in the Asian community, indicating a much more complex picture than the stereotypical view of Asians gambling culture. Delving deeper into the issue of gambling, root causes for problem gambling stemming from poverty to social and cultural isolation due to immigration became apparent.

The major themes related to reasons for problem gambling are largely intertwined with the challenges of integration and stress of immigrant life within American society. These stressors have left a toll on Asian immigrants and have been identified by participants as causes for problem gambling. Gambling is often expressed as a source of comfort or something people turn to as a replacement for something they feel they are lacking. The stress from work and daily life as an immigrant is exacerbated by a lack of outlets to relieve that stress.

Many working-class immigrants are struggling to learn English and find good paying jobs. Some experience downward mobility as they are unable to obtain equivalent jobs to what they had in their native countries. Community members have described work environments where working-class immigrants are working low-wage and stressful jobs which offer little hope of career advancement. In contrast, gambling offers what one participant described as a “false sense of accomplishment” and a “sense of fulfillment” which they are unable to find in their jobs. With a lack of opportunities and outlets to relieve stress and provide happiness, casinos and gambling were seen as a viable solution. Additionally, the stress, depression, and desperation associated with struggling to make a living led to a vicious cycle of gambling and worsening financial distress.

The concept of boredom and its links to social and cultural isolation are a perfect representation of how the Asian gambler is much more complex than it may look on the surface. The true meaning behind the word “boredom” indicates a complex and nuanced issue around the challenge to integrate into American culture and the lack of culturally appropriate and accessible recreational activities. Participants spoke of being unable to find

the same kind of entertainment options they were used to in Asia and struggling to find places they felt comfortable. Boredom also implies that gambling is not the preferred activity, but rather the only activity they feel is available to them. Instead of saying Asians have a cultural propensity for gambling, it is more accurate to state that gambling fills a void for Asian immigrants seeking a refuge from their social and cultural isolation.

The previously described experience of a participant’s reluctance to go to a bar to relax, is a great representation of the challenges of integration and the deeper complexity of Asian gambling. To an English speaker, going to a bar to relax and meet up with friends does not come with the stress and complexities that it does for an Asian immigrant with limited English capacity. Just ordering a drink or looking at a menu presents challenges and adds to stress. Rather than providing a relaxing environment, the barriers serve to emphasize otherness. The bar example also highlights further challenges for Asian immigrants participating in conventional American pastimes. For Asian immigrants working in the service industry, such as restaurant workers, most of the Asian language establishments (e.g., restaurants or bars) are closed by the time their shifts are over. Additionally, for an immigrant working a low-wage job and struggling to make a living, going to a bar may not be something they can afford with their salary. Many study participants highlighted the way gambling at casinos become an easy recreational activity due to the low threshold for entry. Participants noted that they did not need to know English to play slots, the drinks were free, and one only needed a little bit of money to start playing. Others noted that croupiers and other employees spoke Asian languages like Mandarin, Cantonese, or Vietnamese eliminating language barriers. Essentially, casinos have become a venue for Asian immigrants to relax, despite potential harms that gambling poses to Asians as a higher risk group.

Language barriers go beyond access to merely recreational activities. Rather these barriers create great challenges in many aspects of an immigrant’s daily life including their ability to access services and navigate systems. The void that these immigrants feel reflects not only their struggle to integrate into American culture, but more importantly the failure of our society to accept Asian immigrants and their cultures. Rather the engagement that American society provides these vulnerable populations is in many ways directly harmful, going beyond cultural appropriation.

Relationship to the casino

With the focus and connections participants made between gambling and casinos, it would be remiss to avoid discussing the relationship between Asian gambling and the role of the casino itself. As noted in the results, participants described what they felt was targeted advertising and marketing toward Asians in

particular, a concern that has been noted by researchers and the media (13, 22, 60–62).

Through the interviews with participants, it was apparent that the lack of accessible social and recreational activities for Asians created a void that participants felt casinos were able to capitalize on. Participants referred to the service they receive from the casinos, in particular the language access. The inclusion of employees who speak Asian languages makes Asians feel comfortable and creates an environment they struggle to find elsewhere. The concerts were a common draw for participants who expressed desire to attend shows that showcased artists they were familiar with. By catering to the desires of Asian clientele, the casinos are able to lure in Asian immigrants seeking a place of belonging. The lives of working-class Asian immigrants described in this study are hard, stressful, and lonely. These individuals desire outlets for stress, a place where they feel comfortable and able to unwind, an escape from the reality of their daily lives. With a lack of culturally appropriate outlets, participants describe community members turning to casinos and gambling to fill this much needed gap in services. The relationship between Asian communities and local casinos is further complicated by casinos hiring bilingual Asian workers from the communities themselves.

The significance of casino buses ferrying Asians to casinos is not a finding unique to the findings of this study. Discussions of the casino buses have been occurring in other Asian ethnic communities and have even been subject to photo essays and media attention (13, 60, 63). While some may argue that casinos are offering cultural activities for these ethnic communities, the concerns of participants around the role of casinos in playing a role in encouraging Asians to gamble makes one question whether casinos are taking advantage of a vulnerable community. Blame for these marketing strategies does not rest solely on the casinos, but rather connects to the myth of the Asian gambler. Additionally, the myth of the Asian gambling culture, like most structural inequalities, is self-perpetuating. The marketing teams of casinos are influenced by the stereotype, and they target Asian populations (64). The power inequality between casinos and vulnerable Asian populations leads to more Asian gamblers thereby perpetuating the myth.

Structural racism

Structural racism can be characterized by systems that are by design or negligence cyclical and self-propagating (65). In the United States, the vulnerability of Asian immigrants to problem gambling showcases several cyclic structures that work against low-income Asian immigrants in relation to gambling behaviors.

The distribution methods of large gambling studies in the US, often available in English only, results in an invisibility of Asian data. Beyond language access, methodology for larger studies, especially when looking at multiple race categories, fails to use appropriate means to contact and reach certain

Asian demographics. Studies in English and distributed through common mainstream channels may not reach Asian immigrant communities with limited English proficiency who typically do not access these channels of communication. The lack of nuanced Asian data leads to gambling treatment and support systems that are not culturally appropriate for Asian gamblers. Failing to capture the at-risk Asian demographic leads to prevention strategies targeted at mainstream white American gamblers that overlook important root causes for Asian gamblers identified in these interviews (integration stress from social isolation and struggle to make a living). As such, these gambling interventions miss opportunities to help struggling Asian immigrants feel a sense of belonging in American society.

The lack of useful Asian data further leaves a void that has allowed the normalization of the stereotype of the Asian gambler. Even within the Asian community this myth is propagated and normalized within society. The more it is normalized, the more it can be used as an excuse by Asian gamblers themselves and by external bodies (i.e., casinos, policy makers, and researchers). The perpetuation of this stereotype both within Asian communities and externally results in a failure to examine systemic issues which may be driving Asian immigrants to gamble.

The interviews speak to the “life cycle of being an immigrant” and the possible influence this life has upon gambling behavior. As Asian immigrants struggle to make a living and experience a sense of loneliness, boredom, and isolation due to linguistic and cultural barriers, they turn to gambling for to relieve stress and find a community. Gambling as a primary recreational outlet, however, will over time lead to financial losses which can worsen financial stress and decrease a sense of belonging and acceptance in American society. Some of the gamblers may develop gambling related harms, which impacts the communities they come from, completing the cycle as the struggle intensifies.

Casinos play a significant role in the cycle of spreading Asian gambling culture. The inadequately supported social support systems within the community mean that casinos are perfectly poised to conveniently provide a place of belonging. Thereby, the casinos remain packed with Asians, creating an overly representative image that reinforces the myth of the Asian gambler. By relying on the Asian gambler image, casinos create a sense of cultural normalcy around casino gambling, despite gambling being illegal in some of the Asian countries that interview participants came from. The casinos are able to target susceptible, low-income Asians through marketing, busing, and overall environment, thereby drawing more Asians into the casino and contributing to the perpetuation of the gambling stereotype.

Without structural intervention that targets root causes discussed in the interviews, these cycles cannot be easily broken. Asians have long been recognized as an at-risk community for problem gambling, particularly those who are low-income and limited English-speaking. Yet as a society, we have failed

to properly address this issue (66). Therefore, we believe that there are opportunities for change and have developed recommendations for future programs and services in the Greater Boston area.

Opportunities for change and recommendations

Research findings have led Asian CARES to make a series of actionable recommendations, including funding ethnic-based community organizations to develop and deliver culturally and linguistically responsive problem gambling and mental health services and investing in immigrant neighborhoods by creating safe and welcoming spaces of belonging for the Asian immigrant communities where they can pursue recreational and social opportunities. While participants illuminated a painful and challenging issue within the community, they also provided wisdom and insight. The findings highlight social isolation, loneliness, and dislocation which have resulted from immigration and communities of people struggling to find and maintain employment while facing racism and discrimination.

A major recommendation by Asian CARES is a push for investing in the neighborhoods where Asian immigrants live, work, and play. By investing in these neighborhoods, vulnerable Asian communities will be able to create spaces of belonging where they can go for recreational and social opportunities.

Culturally and linguistically appropriate services provided by the trusted ethnic-based CBO like Asian CARES partners who serve as cultural brokers for their communities should be leveraged to provide services that address, alleviate, and heal this problem in the community. Participants expressed a desire to receive help and services from organizations in their community that they trusted, people who understood their culture and their lived experiences. The role of ethnic CBOs is vital in providing services tailored to the actual needs and situations of the community and for ensuring thriving communities for working-class Asian immigrant families (67–70). In terms of problem gambling, there is a limited number of existing resources for the Asian community, and while government agencies are working to be more responsive to the community, there is still a need for more services to this population. As ethnic-based CBOs serve as a safety net for vulnerable Asian communities, their knowledge and lived experience provide the expertise necessary for helping and reaching this population.

Beyond the actionable recommendations for addressing the research findings, there are also areas for future research. As noted in the limitations of our research, more focus could be placed on gathering information from other Asian ethnic groups to further illuminate the issue and highlight the nuances between ethnic groups, particularly Southeast Asian groups, who were not captured in the research. Further research into the issues of language access and marketing practices of the casinos is warranted. As casinos have in-language and culturally relevant

recreational services, future studies into cultural isolation and casino marketing would be beneficial to better understand their intersection. Additionally, this research captures a picture of problem gambling from Asians living primarily in the Greater Boston area. Future research could be expanded to other ethnic communities and to other geographic regions.

Additionally, some of the recommendations of the research which were presented in the Asian CARES report (71) published by the Massachusetts Gambling Commission are being considered. In the future, as these recommendations are being implemented, a follow-up studies should examine the effects of these recommendations on the prevalence and impacts of problem gambling on Asian communities and potential changes in participant responses. They could demonstrate how CBPR research focused on addressing racial inequities and advocating for change can lead to positive outcomes for a vulnerable community.

Limitations

Limitations of this study should be taken into consideration when reviewing the results and considering future research. Broadly, there are some limitations to qualitative research, especially considering the self-reported data. All responses from participants were based on their past recollections and could include recall bias. Additionally, a majority of the interviewees were female which may have resulted in a bias toward their perspectives rather than male perspectives. International studies have shown that in some Asian cultures, perception of gambling and acceptability of gambling behaviors can vary based on gender (18, 72). As the data was gathered during a pandemic, some of the social interactions they were referring to were currently unavailable.

The research also specifically focused on Asians in the Greater Boston region, and the potential for regional specificity should be considered before generalizing to other communities. The invisibility of Asians and Asian immigrants in gambling research is much less of an issue outside of the United States, where more focus has been placed on the habits and psychology of Asian gamblers (16, 73–75). Asian immigrant experiences in other countries may vary from the experience of Asians in the US.

Disaggregation of data is an important and often overlooked aspect of Asian research. The common practice of aggregating data often results in lumping many Asian ethnic groups into one large “Asian” umbrella. While the aim of our research was to provide insight into multiple Asian ethnic groups, time and capacity restraints on the community fieldworkers influenced the ability to gather robust data on certain ethnic groups. Due to the COVID-19 pandemic and growing racial unrest from the Atlanta shootings, community fieldworkers were stretched thin serving an increase in clients and constituents. Additionally, the demands on the ethnic communities themselves constrained

the interviewing process. Therefore, sample sizes for some ethnic groups, particularly Korean and Vietnamese participants, resulted in insufficient representation for disaggregation of data. Despite this, we still found notable heterogeneity by ethnic communities that should be investigated in future research.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author/s.

Ethics statement

The studies involving human participants were reviewed and approved by Tufts University Social Behavioral and Educational Research Institutional Review Board (SBER IRB). The Ethics Committee waived the requirement of written informed consent for participation.

Author contributions

MHC was primarily responsible for the preparation and writing of this document, involved in all stages of the research including study design, data collection and analysis, and dissemination of research. BH was a co-principal investigator for the Asian CARES project, was involved in conceptualization of the project, community outreach, dissemination of the research, and contributed to the review and editing of the manuscript. DS and LL are community partners who were involved in the conceptualization, community outreach, and dissemination of the Asian CARES research, provided management of the community fieldworkers, and contributed to the review and editing of the manuscript. MY was a co-principal investigator for the Asian CARES project, was involved in conceptualization of the project, community outreach, dissemination of the research, provided management of the community fieldworkers, and contributed to the review and editing of the manuscript. MTC contributed to the review and editing of the manuscript and supervised the writing process. HR was a co-principal investigator for the Asian CARES project, responsible for all stages of the research including study design, methodology, data collection and analysis, dissemination of research, and contributed to the review and editing of the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of interest

Author LL was employed by Vietnamese American Initiative for Development Inc. Authors BH, LL, DS, MY, and MTC were employed by ADAPT Coalition. Authors BH and MY were employed by Boston Chinatown Neighborhood Center (BCNC).

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2022.956956/full#supplementary-material>

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"I'm sick of being called a hero – I want to get paid like one": Filipino American frontline workers' health under conditions of COVID-19 and racial capitalism

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Although the era of COVID-19 has reaffirmed the vital role of frontline workers in maintaining a functional society, the ongoing pandemic has taken a devastating toll on their health and well-being. In the United States, Filipino American frontline workers in healthcare and service industries have endured threats to their health, safety, and economic livelihood throughout the pandemic and against the broader backdrop of racialized and xenophobic hate directed toward Asian Americans. Drawing on a qualitative approach, the current study explores work-related health risks and effects of the pandemic for Filipino American frontline workers. Data come from the qualitative arm of a larger mixed-methods study that used a community-based participatory research approach. The current analysis is based on focus group data with thirty-five Filipino American frontline workers, a majority of whom were migrants, that worked across healthcare, caregiving, education, childcare, food services, and retail industries. Situated through the lens of racial capitalism, themes included: (1) work-related stress, tensions, and trauma, (2) anti-Asian racism and intersections with age- and gender-based violence, and (3) working while ill and distressed. Study findings can inform interventions and policies to improve health, occupational environments, and labor conditions in order to support minoritized communities disproportionately affected by COVID-19.

KEYWORDS

frontline workers, COVID-19, health, racial capitalism, Filipino Americans

Introduction

Although the COVID-19 pandemic has re-affirmed the vital role of essential and frontline workers play in maintaining a functioning society, it has also taken a devastating toll on the health and well-being of these workers. Definitions of essential workers vary by region and have evolved over the course of the pandemic, yet they are generally employees within healthcare, food processing and services, agriculture, child care, janitorial work, manufacturing, retail, and other critical sectors. Among essential workers, frontline workers are those who are unable to work from home, and because

they provide labor in person, are placed at greater risk of exposure to COVID-19 (1, 2). People of color, migrants, women, and other minoritized groups are disproportionately represented as frontline workers across various sectors (2–5). Among the most marginalized within this labor force, many lack health insurance (6) and face poorer health due to social and economic disadvantages that existed prior to the pandemic (3), contributing to a widening of social, economic, and health inequities as the pandemic lingers.

Filipino frontline workers in the U.S.

Filipino Americans represent a significant proportion of frontline workers in health and service industries, making them vulnerable to contracting and dying from COVID-19. For example, data from the early stage of the pandemic revealed Filipino Americans accounted for at least 35% of deaths due to COVID-19 among Asian Americans in California despite comprising about 25% of the state's Asian American population (7). Nationally, Filipinos comprise 4% of all registered nurses in the U.S. but constitute 31.5% of all COVID-19-related fatalities, as they are more likely to work the frontlines of intensive and acute care units (8, 9). Beyond those employed in healthcare, many Filipinos are vulnerable to precarious work conditions and trafficking (e.g., home health and domestic care, hospitality, “guest worker” positions), particularly for the hundreds of thousands (310,000+ as of 2017) of undocumented Filipino migrant workers in the U.S. (10). Furthermore, a 2019 AAPI California Worker's Survey indicated that 22% of Filipino Americans were working and also struggling with poverty (11), increasing the likelihood of workers feeling compelled to continue working even if they fall ill. This has all occurred against the broader backdrop of racialized and xenophobic hate directed toward Asian Americans (12), including highly-publicized cases targeting Filipino Americans that have created a climate of fear and anxiety about issues of community safety (13).

The existing body of research on Filipino American frontline workers highlights various social, economic, and health challenges they face. Given the sizeable representation of Filipino Americans in nursing, numerous studies have highlighted heightened risk for COVID-related death (8), as they are more likely than White counterparts to work in acute and long-term inpatient settings (14). In addition, compared to White counterparts, Filipino nurses (RNs) report lack of advancement and burnout as occupational stressors yet are less likely to consider leaving their position (14). Other research with Filipino home-health workers and those employed in nursing homes and assisted living facilities underscores exploitative employment conditions (e.g., irregular or lack of mandated rest and meal breaks), lack of safety protections (e.g., limited personal protective equipment, or PPE), risk of physical injury

on the job, and lack of health insurance or limited access to medical care (15) that existed prior to the pandemic. Many of the Filipino workers in healthcare and caregiving are migrants (16), with research showing a positive association between job-related stressors and chronic health conditions (17) as well as a link between job dissatisfaction and psychological distress (18) among Filipino migrants overall. Despite the mounting evidence exploring occupational stressors and their effects on health, few studies have examined the experiences of Filipino American frontline workers employed across diverse industries during the pandemic (3, 19).

Conceptual framework: Racial capitalism

Racial capitalism offers a framework for understanding how racial and capitalist hierarchies work together to create the structures and conditions that contribute to social and health inequities. Emanating from the contributions of radical African and Black intellectuals, and synthesized, expanded, and elevated by Cedric Robinson (20), racial capitalism posits that racism and capitalism are intertwined, such that capital accumulation among elites is dependent on the labor and exploitation of Black people. As articulated by Bright et al. (21): “The theory of racial capitalism proposes an origin story for how it is that the global economy came to be racially stratified and (in the main) organized along capitalist lines” (p. 1). Given legacies of colonialism and imperialism that have depended on the extraction and exploitation of labor, land, and resources of Indigenous people, enslaved Africans, and other racialized peoples, racial capitalism is a relevant framework across racially minoritized workers (22, 23), and offers a historical lineage and context for understanding the interdependence of racism and class oppression as a fundamental cause of disease (24) and form of structural violence influencing health (25).

Turning to the current public health crisis, McClure et al. (26) argue that racial capitalism is a key driver of racial disparities in COVID-19 infections given the primacy of occupational settings in viral transmission among workers of color in low-wage, service-sector, and healthcare industries. Drawing on analysis of workers' compensation claims, they critique the dominant narratives that focus on individual-level and culture-based risks for COVID-19 (e.g., comorbidities, health literacy, multigenerational household arrangements) that mask the complicity of industries and institutions in failing to protect workers' health and safety. As such, elites that control these industries stand to profit from policies that prioritize continued operations over the well-being of the workers, thereby increasing workers' susceptibility to illness and pre-mature death (27, 28).

Filipino Americans have a long history of filling U.S. labor shortages in industries now deemed “essential,” such as nursing as well as within care, agricultural, and service economies (29,

30). The history of U.S. colonialization of the Philippines in the early 20th century, which followed three centuries of Spanish colonization, created systems and practices that facilitated the export of Philippine labor abroad (29, 31, 32). Under U.S. colonialization, Filipinos were considered U.S. nationals that addressed economic imperatives and labor needs after the abolition of slavery and in light of exclusionary policies that prohibited immigration from Asia. According to Rodriguez (31), “the colonial migrant labor system could assure the United States of a continuous pool of cheap foreign labor,” unhampered by political challenges that workers from other countries posed (p. 4).

Before the Tydings-McDuffie Act of 1934 established the process of eventual independence and effectively halted Philippine immigration to the U.S., Filipinos in the U.S. during the early 1900s labored as agricultural, cannery, hospitality, and domestic workers, creating sizeable communities along the West Coast of the United States (31, 32). In addition, the U.S.-backed *pensionado* program, which initially facilitated Filipinos from elite class backgrounds to study and train in the U.S., later allowed for colonial education and training systems to proliferate broadly in the Philippines, such as the Americanized professional nursing education system (29). In her historical account of nurse migration from the Philippines, Choy (29) describes how U.S. colonial agendas created preconditions “that would lay the foundation for a gendered, racialized, and professional labor force prepared for export to the United States in the tens of thousands by the 1950’s through the present” (p. 42). In all, these historical linkages help to contextualize present day conditions for Filipino American frontline workers.

Drawing on the lens offered by racial capitalism, the purpose of this study is to examine work-related health stressors and effects of the COVID-19 pandemic from the perspectives of Filipino American frontline workers. By learning about the specific contexts and dimensions of Filipino American frontline workers’ experiences during the pandemic, this study aims to inform responsive policies to address conditions that shape broader social, economic, and health inequities.

Materials and methods

Data for this research derive from a broader mixed-methods study that used a community-based participatory research approach, working in partnership with Filipino Migrant Center (FMC), a non-profit organization that serves and advocates for Filipino migrant workers and their families in Southern California. A dedicated team of FMC staff and volunteers took on roles as Community Researchers, trained in research ethics and procedures, to guide the research project aims and data collection processes, and to provide feedback on the preliminary interpretation of findings.

Community-based participatory research (CBPR) – with its fundamental principles of centering community-identified needs and perspectives, building on existing strengths and assets within communities, and using research to address health inequities and advance social justice – shaped the development and implementation of the broader study. CBPR is part of a broader movement toward developing decolonizing methodologies that challenge the ways in which dominant health research paradigms can exclude or exploit marginalized communities and, instead, begins with and permeates throughout its process communities’ experiences and forms of knowledge (33, 34).

The intentional use of focus group research allowed for obtaining rich data and emic perspectives of the specific experiences, contexts, and dimensions of Filipino American frontline workers’ health-related risks and effects of the pandemic. Given the population of interest, the group interview setting encouraged active, open discussion among participants with shared experiences working on the frontlines, while creating space to explore similarities and differences. Prior research indicates focus groups are an especially effective method for researching minoritized populations who mistrust, are unfamiliar with, or have not been invited to take part in research (35, 36).

Recruitment and participants

Using a combination of convenience and snowball sampling, participants were invited to take part in focus groups as part of FMC’s broad network of community contacts. Recruitment took place via postings on social media, email invitations, announcements at community events, and word of mouth. To be eligible, focus group participants needed to: (a) identify as Filipino or Filipinx/a/o American, (b) be 18 years or older, (c) speak Tagalog or English, (d) live in California, and (e) be currently employed as a frontline worker in the industries of either healthcare, retail, food services, caregiving, education, or janitorial services. Potential participants who were interested in taking part in focus groups were further screened, received an information sheet about the study, and provided oral consent. Research-trained FMC staff and Community Researchers served as facilitators for focus groups. All procedures were approved by the UCLA Institutional Review Board.

The research team conducted nine focus groups with a total of 35 participants from December 2021 through April 2022. To increase access and participation, four focus groups took place in-person and five online via Zoom. In-person focus groups were video and audio-recorded, and online focus groups were recorded on Zoom with automated transcription enabled. Five of the nine focus groups were conducted in Tagalog, and an online service was used to transcribe and translate focus group data in English. University and Community Research

team members cleaned and verified all transcripts against video and audio recordings, including translated transcripts by team members fluent in Tagalog.

The 35 participants ranged in age from their early 20's through late 70's. Most were born outside the U.S. (91%) and female (80% female, 17% male, and <1% genderqueer). Industries represented include healthcare (20%), caregiving (40%), education/childcare (20%), food services (8.5%), and retail (11.4%). All participants were employed in the Southern California region (see [Table 1](#)).

Interview guide and procedure

A focus group interview guide and facilitation format were developed alongside FMC Community Researchers and informed by the study's conceptual framework, along with guidelines from Hall (35). The research team ensured cultural validity and appropriate translation and back-translation of interview questions in consultation with community members. The interview guide covered five general areas. The current study focused on questions related to the pandemic's effect on participants' work and health. Sample questions included: What is your job/occupation and what do you like most about your job? What are some common problems in your workplace? What problems emerged during the pandemic? What were some of the effects of the pandemic (such as health, housing, work) on you personally?

In order to address power differentials between participants and research team members, focus group facilitators emphasized that participants were experts in their own experiences and that the research team aimed to learn from them. On average, the duration of focus groups was 2 h. All participants received a \$50 gift card as compensation for their time and participation.

Researcher positionality

Trained as an interdisciplinary social work researcher, my grounding in ethnic studies provides a critical perspective I adopt in my research to examine power relations embedded within and historical linkages to current social and health inequities. As a second-generation Filipino American woman, my intersectional identities overlap and diverge from the experiences of participants in this study. I grew up in a neighborhood with a large concentration of low-income, working-class Filipino American families that mirrors the communities from which the study participants were drawn. However, my status as second-generation (U.S.-born) with rights afforded as a U.S. citizen departs from the migrant majority that comprise the study sample. My current status as a university professor extends class privilege that is denied to many of the participants, particularly those working

precariously within the caregiving, retail, and service economies. My aim in conducting this research is to examine and elevate the health experiences of Filipino Americans, who are often obscured in aggregate data of Asian Americans.

Analysis

Reflexive thematic analysis (TA) guided the analytic process (37, 38). The author read through the first transcript and made initial observations about the data, including thoughts, questions, and potential codes. The first phase of coding involved in a combination of line-by-line, *in vivo* coding (derived directly from participants' words and phrases) and concept coding, or analytic coding, in which larger units of data were assigned meaning based on theoretically relevant concepts (39). With each completed focus group, the author read through the entire transcript and listened to recorded focus group audio simultaneously, drawing on first-phase coding procedures to generate, consolidate, revise, and apply codes to data. Redundant and overlapping codes were consolidated and refined. Subsequently, a second phase of axial coding enabled higher levels of abstraction to create broader conceptual categories, subthemes, and themes. Throughout this process, reflexive analytic memoing took place for each transcript as well as various points throughout the analytic process. Community partner debriefing and member checking served as an additional measure to ensure rigor and trustworthiness (40).

Results

Data were organized into three primary themes: (1) work-related stressors, tensions, and trauma, (2) anti-Asian racism and intersections with age- and gender-based violence, and (3) working while ill and distressed. [Table 2](#) provides a map of the study themes and subthemes.

Work-related stressors, tensions, and trauma

A core pattern that cut across all participants involved increased workloads due to understaffing, attributed to workers out sick with COVID or resigning due to overwhelming stress and lack of organizational support. For example, within hospitals specifically, nurses on frontlines assumed the burden of direct care to ill patients battling the virus. As lower-status workers within the organizational hierarchy of the healthcare system, nurses took on the brunt of emotional labor, overwhelming hours on-call, and regularly witnessed death.

TABLE 1 Participant characteristics.

Participant	Industry	Age range	Gender	Migrant generation
Participant 1	Healthcare	35–39	Female	2nd-generation (U.S. born)
Participant 2	Healthcare	60–64	Female	1st-generation (migrant)
Participant 3	Healthcare	75–79	Female	1st-generation (migrant)
Participant 4	Healthcare	35–39	Male	1st-generation (migrant)
Participant 5	Healthcare	35–39	Female	1st-generation (migrant)
Participant 6	Healthcare	40–44	Female	1st-generation (migrant)
Participant 7	Healthcare	30–34	Female	1st-generation (migrant)
Participant 8	Caregiving	70–74	Female	1st-generation (migrant)
Participant 9	Caregiving	55–59	Female	1st-generation (migrant)
Participant 10	Caregiving	55–59	Female	1st-generation (migrant)
Participant 11	Caregiving	50–54	Female	1st-generation (migrant)
Participant 12	Caregiving	65–69	Female	1st-generation (migrant)
Participant 13	Caregiving	30–34	Male	1st-generation (migrant)
Participant 14	Caregiving	20–24	Female	1st-generation (migrant)
Participant 15	Caregiving	50–54	Male	1st-generation (migrant)
Participant 16	Caregiving	60–64	Female	1st-generation (migrant)
Participant 17	Caregiving	45–49	Female	1st-generation (migrant)
Participant 18	Caregiving	45–49	Female	1st-generation (migrant)
Participant 19	Caregiving	45–49	Female	1st-generation (migrant)
Participant 20	Caregiving	60–64	Female	1st-generation (migrant)
Participant 21	Caregiving	60–64	Female	1st-generation (migrant)
Participant 22	Education/Childcare	30–34	Female	2nd-generation (U.S. born)
Participant 23	Education/Childcare	20–24	Genderqueer	2nd-generation (U.S. born)
Participant 24	Education/Childcare	66–69	Male	1st-generation (migrant)
Participant 25	Education/Childcare	30–34	Female	2nd-generation (U.S. born)
Participant 26	Education/Childcare	25–29	Female	1st-generation (migrant)
Participant 27	Education/Childcare	25–29	Female	1st-generation (migrant)
Participant 28	Education/Childcare	55–59	Female	1st-generation (migrant)
Participant 29	Food Services	25–29	Female	1st-generation (migrant)
Participant 30	Food Services	20–24	Female	1st-generation (migrant)
Participant 31	Food Services	20–24	Male	1st-generation (migrant)
Participant 32	Retail	25–29	Male	2nd-generation (U.S. born)
Participant 33	Retail	25–29	Female	2nd-generation (U.S. born)
Participant 34	Retail	40–44	Male	1st-generation (migrant)
Participant 35	Retail	75–79	Female	1st-generation (migrant)

Intensified workloads and additional responsibilities

A core pattern that cut across all participants involved increased workloads due to understaffing, attributed to workers out sick with COVID or resigning due to overwhelming stress and lack of organizational support. For example, within hospitals specifically, nurses on frontlines assumed the burden of direct care to ill patients battling the virus. As lower-status workers within the organizational hierarchy of the

healthcare system, nurses took on the brunt of emotional labor, overwhelming hours on-call, and regularly witnessed death.

I think during the surge, I felt the support from my coworkers. We helped each other out because we didn't really have doctors around. When the patient's about to die or when they're about to code, that's when the ER doctor comes, but then other than that it's just us. (Nurse, female, age 30–34).

TABLE 2 Thematic map.

Theme	Sub-theme	Sample quote
Work-related stressors, tensions, and trauma	Intensified workloads and additional responsibilities	You made me become something that wasn't even supposed to happen - a teacher, a therapist, a caregiver, a [recreation] aide, everything under the sun, and a janitor, because I had to clean all the toys every day that the kids touch, we had to wash every day
	Inadequate health and safety protections	So, when the supply was short I think they were trying to have backup so we don't run out so. People on the floor were restricted - okay one mask, one gown and things like that - but they were hoarding them from whatever donations that they can get. Because when it all started, a lot of organizations knew that there was shortage of PPE, so a lot started to donate whatever they had, and I'm speaking only for my hospital. I know our hospital had hoarded those supplies. They didn't release it right away to the floor because there were trying to ration as much as they can, but then. You know, if you're on the floor and you're reusing the same thing over and over and then COVID is everywhere, it doesn't really make you confident or feel safe working, putting that mask on over and over
	Critical perspectives of employers	At the end of the day, it's really the workers that are affected because it's not like we got, like, hazard pay, or it's not like we're getting any bonus if we meet this goal. So I think that's a very big problem, and you know the management, they don't really appreciate you at the end of the day, and they expect you to even [work] overtime
	Workplace trauma	When people crash like that, when they do code blue, that's not the only patient. After patient passes away, you still have to take care of your other patients, so you have to put on another face and work like nothing happened. Carry all this emotional baggage, this, you know, just go through your 12 hours.
Anti-Asian racism and intersections with age- and gender-based violence	Elders as targets of racist violence	The people in the car said, "Asian." I immediately thought that there was hate for Asians going on. The other one came down from the car. Chasing me and throwing things at me. I was thankful that somebody came and blocked them, they even brought me to where I was working. I did not do anything at that time because I was trembling in fear
	Healthcare workers racialized and viewed as "disease carriers"	Because of wearing scrubs... we're spreading the virus. And it doesn't help that you're Asian, you're wearing scrubs, so aside from that Asian violence, it's also the, you know, you're being discriminated because they think you're carrying the virus
	Gendered racism	We would get a lot of like slurs from customers, and I'd even say some sexual harassment. The women in the drive-through, like, there would be some male customers who would really just ask for your number, even just ask, "Would you f--- me after work?" Like, straight up say that. And you know, you would report it. The management is like, write a report about it, but sometimes, because it's so busy, like, we're just forced to like brush it aside
Working while ill and distressed	Mental health issues: Anxiety, depression, and burnout	As for me, my anxiety is like the ones mentioned earlier, I just cry when I go to work... I was also really burnt out, as if I couldn't take it anymore. I'm not the type who complains at work, even though- I'm not the type who is always absent from work, but at that time, it really felt like I don't want to go into work anymore
	Physical health issues	I think there are points where you kind of see yourself... when things are quiet you're just kind of like, Oh my God, I am not okay. You know, and then you start not sleeping, and then you start eating weird, and you start eating what you can... like the health stuff goes up and down

As policies around COVID-19-related health and safety standards frequently changed, workers took on extra duties beyond their immediate scope of work:

[My employer] made me become something that wasn't even supposed to happen - a teacher, a therapist, a caregiver, a [recreation] aide, everything under the sun, and a janitor, because I had to clean all the toys every day that the kids touch, we had to wash every day. (Child care worker, female, age 30–34)

An additional responsibility that workers took on involved policing mask-wearing. Participants across industries reported challenges having to enforce mask-wearing with patients, students, customers, and colleagues. They acknowledged that constantly changing and conflicting mask-mandates contributed to widespread confusion, and interacting with people who refused to wear them contributed to awkwardness and worries about potential conflict or getting infected with COVID-19, particularly in light of uneven power dynamics in the workplace.

There was the student that I was working with and I was dealing with all day. And then, you know, he came to school, [we learned] he was positive [for COVID-19]. So that was really hard. We just live 1 day at a time, we don't know if this person is positive or not, that's the hardest part. We try to tell [students] to really keep their masks on but some of them are saying no, they are allergic to the mask, so that's why they remove it. (Paraeducator, female, age 55–59)

I haven't had the courage to tell him, You've got to step up your safety. Because he's the teacher and I'm the aid to his students. So it's like, I feel like it's not in my place. So that's been kind of weird, trying to like navigate when to speak up. (Paraeducator, female, age 30–34)

Workers also took on the burden of emotional labor during this period of prolonged uncertainty. Serving on the frontlines made workers vulnerable to the public's expressed anger and frustration to systems beyond workers' control, such as supply-chain shortages. As a result, workers were often the target of mistreatment and outsized demands and expectations.

Just the underlying amount of stress on top of just regular stress of being in retail. People asking, "Why is this not in stock?" Like, do you want me to call China and tell people to manufacture a computer real quick? Like, I can't do that. I don't control supply chains, I don't control these things. (Retail worker, female, age 26–29)

Despite additional responsibilities and occupational hazards associated with COVID-19, most workers, particularly non-unionized workers, were not compensated with hazard pay or given sufficient paid sick leave. Instead, management provided staff with pizza or pastries during work breaks and displayed posters that hailed workers as "pandemic heroes." As one participant stated, "I'm sick of being called a hero – I want to get paid like one. So it's kind of frustrating to just continue and be thrown in the fire as a frontliner." (Child care worker, female, 30–34). Still, among precarious workers and those who were undocumented and regularly denied fair compensation, such recognition or trivial fringe benefits were non-existent.

Inadequate health and safety protections

Participants described insufficient access to PPE and on-site testing across various industries and work settings, particularly during the 1st year of the pandemic. Non-healthcare workers often bought their own PPE and sanitizing products as they were not consistently provided by many employers, placing a heavier financial toll on low-wage and precarious workers. Lower wage workers also took time outside of work to visit free, public COVID-19 testing sites regularly as a means to ensure they remained healthy while working.

Healthcare workers in hospitals were acutely affected by the lack of PPE given their role on the frontlines treating very sick patients. Although the shortage of PPE at the start of the pandemic was ubiquitous, hospital workers expressed frustration with supervisors and hospital administration's lack of transparency regarding the availability and process of rationing supplies. Tensions with leadership, coupled with the struggle to manage the influx of patients, contributed to a sense of demoralization.

When the supply was short I think [hospital administrators] were trying to have backup so we don't run out... They didn't release it right away to the floor because there were trying to ration as much as they can, but then. You know, if you're on the floor and you're reusing the same thing over and over and then COVID is everywhere, it doesn't really make you confident or feel safe working, putting that mask on over and over. (Nurse, female, age 40–44)

Across all industries, workers described ongoing worries and vigilance regarding exposure to the virus at work in light of concerns over employment security and economic pressure to provide for their families, as well as to protecting elderly and vulnerable family members from infection.

Critical perspectives of employers

The inability of employers to prioritize the health and safety of their workers (via appropriate PPE, regular testing, and work environment safeguards) in light of uncertain and overwhelming working conditions underlined existing power inequalities within organizations. Participants critiqued the policies of management, which they perceived as prioritizing sustained operations over workers' well-being.

At the end of the day, it's really the workers that are affected because it's not like we got hazard pay, or it's not like we're getting any bonus if we meet this goal. So I think that's a very big problem, and you know the management, they don't really appreciate you at the end of the day, and they expect you to even [work] overtime. (Food service worker, female, 25–29)

I think during COVID, we were always complaining like, Why are we still open? I remember being slightly annoyed, and being scared when I had to come into work. I just would see people buy unnecessary things. And I'm like, you should be home, I should be home, what are we doing, why are you buying these video games? (Retail worker, female, age 25–29).

In addition, workers discussed how employers created policies that, in some cases, appeared uninformed and detached from frontline working conditions.

So [administrators] are creating all these policies and all these things that some of them seem unrealistic, some of them seem ridiculous, some of them seem okay, we can do that. But how do they know unless they're in there with us? So all these people on the higher ups are making these policies and these decisions without the voices of people who are actually doing the work. All the childcare people, all of the custodians, everyone just didn't know what was going on, but they shoved us back in. (Child care provider, female, 30–34)

Workplace trauma

Healthcare workers, particularly nurses, described the intensity and pressures of working with the increasing volume of COVID-19 patients in the early phase of the pandemic before vaccines were available. As one participant who worked as an ICU nurse for several years stated: “I have never experienced this much death and dying” (Nurse, male, age 35–39). Participants commented about the volume of patients who were admitted to the hospital whose condition deteriorated quickly and sometimes unpredictably, and the emotional labor involved in the provision of care to patients infected with COVID-19. Despite hearing about exceptions with colleagues at other facilities, there was widespread perception among healthcare workers that the psychological effects of this pervasive trauma were not acknowledged among employers, nor opportunities provided to process these experiences.

When people crash like that, when they do code blue, that's not the only patient. After the patient passes away, you still have to take care of your other patients, so you have to put on another face and work like nothing happened. Carrying all this emotional baggage, this, you know, just go through your 12 h. (Nurse, female, age 40–44)

Though healthcare workers encountered workplace trauma more regularly, workers in other essential industries were impacted by traumatic events. One participant employed in retail described how a coworker had passed out in the store and was taken to the hospital, where the coworker died a few days later. Store employees were told the cause of death was a “medical anomaly” unrelated to COVID-19, and after 1 day of the store closing, it reopened to “business as usual.”

A part of me always thinks, Did we contribute to that? Like as a company, or the store? And I think that's also like why so many people got a wake-up call and left because they're like, it's traumatizing. (Retail worker, female, age 25–29)

Anti-Asian racism and intersections with age- and gender-based violence

Participants reported direct experiences of racialized violence, including forms of verbal harassment, physical assault, avoidance or shunning, and comments that contributed to a hostile work environment. In addition, participants were aware of other immediate family or community members who experienced some form of anti-Asian racism. Vulnerable subgroups included older Filipino migrant women (subtheme 3.2.a) and workers employed in health-related fields, such as nursing and in-home caregiving, often viewed as “disease carriers” (subtheme 3.2.b). This theme also includes examples of gendered racism in the form of sexual harassment at work (subtheme 3.2.c).

Elders as targets of racial violence

High-profile media stories that have featured elder Asian American victims have caused widespread concerns about safety, particularly for the most vulnerable in these communities. Older participants reported increased vigilance when going out, and many were afraid to leave their homes unless it was deemed absolutely necessary. Participants who were older migrant women reported discriminatory and violent encounters commuting to and from work. In one instance, a participant was physically assaulted during a stop to the grocery store before work. She explained that a car with two passengers approached her, in which one person threw a glass bottle at her and another got out of the car to run after her; fortunately, a bystander intervened:

The people in the car said, “Asian.” I immediately thought that there was hate for Asians going on. The other one came down from the car. Chasing me and throwing things at me. I was thankful that somebody came and blocked them, they even brought me to where I was working. I did not do anything at that time because I was trembling in fear. (Caregiver, female, age 60–64)

Older women participants who relied on public transportation commonly experienced harassment. As one participant shared:

I also had an experience near the bus stop with a man, he said, “Are you Chinese or Korean?” I didn't mind him. He continued, “Why you're still here? Why you don't go back to your country?” I didn't reply and I just ran to the other bus stop.” (Caregiver, female, age 45–49)

Health workers racialized and viewed as “disease carriers”

Healthcare workers specifically mentioned that they no longer want to be seen in public wearing scrubs. Two nurses explained how being healthcare workers of Asian descent made them feel like potential targets of violence, and these fears were amplified by knowing other healthcare workers directly who experienced harassment while out in the community.

(Nurse, female, age 35–39): Because of wearing scrubs... we’re spreading the virus. And it doesn’t help that you’re Asian, you’re wearing scrubs, So aside from that Asian violence, it’s also the, you know, you’re being discriminated because they think you’re carrying the virus.

(Nurse, female, age 40–44): I think [colleague] got attacked right?

(Nurse, female, age 35–39): Was not physically attacked but verbally. She was told at the store, she needs to “go home” [to the country she came from], because she may have the virus, because she was wearing scrubs.

A home health worker discussed her experience riding the bus with a fellow worker wearing scrubs, indicated they felt shunned by others who seemed scared of them:

Yes, especially when you have a scrub suit on, they know you work in the hospital. One time [a friend] and I, we got on the bus, they saw us in a scrub suit and asked, “Are you working in the hospital?” I said, “We’re doing one-on-one private duty.” [Her friend] said, “Oh, Ate [older sister/female friend], let’s not go out wearing a scrub suit.” We were told not to wear scrub suits when going out. If they see you walking, they automatically think, Where did she come from? Maybe she’s infected. Especially if you work in nursing homes. (Caregiver, female, age 45–49)

These experiences instilled a sense of fear in participants, constraining their desire to be out in public and their ability to engage in everyday activities outside of their home or workplace.

Gendered racism

In addition to discriminatory and violent acts, women participants reported sexual harassment on the job, particularly in occupational settings wherein the majority of workers were Filipino women. Examples of this form of workplace harassment included inappropriate, disturbing comments as well as offensive, unwanted sexual advances. Participants expressed that the broader work climate discouraged the practice of addressing these forms of harassment.

We would get a lot of like slurs from customers, and I’d even say some sexual harassment. The women in the drive-through, like, there would be some male customers

who would really just ask for your number, even just ask, “Would you f— me after work?” Like, straight up say that. And you know, you would report it. The management is like, write a report about it, but sometimes, because it’s so busy, we’re just forced to like brush it aside. (Food service worker, female, age 25–29)

Working while ill and distressed

Pandemic stressors contributed to severe symptoms of mental and physical health problems. Anxiety, depression, and burnout were common psychological challenges that workers faced across all industries represented among participants (subtheme 3.3.a). In particular, participants’ concerns about falling ill and not being able to work, as well as virus transmission fears, contributed to anxiety about threatening their family’s health and economic stability. In light of workplace trauma, some participants were directly affected by death on the job, while others were haunted by the prospect of their own deaths as a result of their work. Many participants expressed pressure to continue working despite physical illness and other health ailments (subtheme 3.3.b).

Mental health issues

Participants described heightened symptoms of anxiety, depression, and burnout as a result of working conditions during the pandemic. Anxiety, in particular, was a dominant psychological response. Many participants expressed relentless worry related to concerns about contracting COVID-19, which had the potential to hinder their ability to continue working and provide financially for their families. As one participant expressed: “I am really scared since it is just my son and me. What if something happens to me? How about my child? He doesn’t work. Student. That’s what I’m most worried about. It’s not easy being a mom, and it’s even more difficult if I get sick, or maybe die – then what?” (Caregiver, female, age 60–64).

Given already precarious working conditions, many caregivers and home health workers had economic concerns about losing their jobs or missing work due to illness. These participants were all migrants, many of whom were employed on a contract basis or, if undocumented, paid “under the table” and are therefore ineligible for employment benefits such as sick leave, a requirement in the state of California. As one participant expressed, “I was so scared to lose my job - where I’d sleep? Or if I’ll become homeless here?” (Caregiver, female, age 50–54). Still, many continued to work despite occupational hazards. The lack of formal benefits and employment protections fueled a sense of anxiety. One participant contrasted her circumstances with those of her patient in the event each was affected by life-threatening illness:

He is rich. If he got sick, he said, if he was in a vegetative state, he would just want to die. How about me? I have no money. If I get sick, where will I be picked up? There is no assurance that when you will be hospitalized, you will be treated there the same way as he was treated or if you will recover or if you will die straight away. Those are my worries. (Caregiver, female, age 45–49)

Participants expressed concerns about the potential to contract COVID-19 and spread the virus to vulnerable family members, particularly elderly and immunocompromised members. These fears were complicated by having multiple family members across generations employed within essential industries. Efforts to maintain physical distance affected family bonds and time usually spent together. A caregiver reported, “You can’t see your family... Of course, you are afraid that they might get infected” (Caregiver, female, age 60–64). In addition, many participants felt an overwhelming sense of obligation to protect family members’ health, and were burdened with guilt from engaging in high-exposure activities at work as well as the prospect of infecting loved ones at home.

Prior to the widespread availability of vaccines, frontline workers navigated uncertainty with regards to how the virus spread, and were additionally confronted with a lack of appropriate PPE to protect themselves from contracting the virus. As trauma and death became prevalent for hospital workers, many nurses expressed constant anxiety and worry about their ability to cope and keep up with the pressure of keeping patients alive:

During the COVID surge I had anxiety before going to work because you’d expect the worst. You know, like, I asked myself: oh my God... how many patients are going to die today? (Nurse, female, age 30–34).

A number of participants described having active symptoms of depression, anxiety, panic, and burnout while working on the job. For example, in-home caregivers and health workers who stayed with their patients during phases of lockdown were especially isolated in patients’ homes, fueling depression and anxiety. For retail and service workers, having to respond the barrage of angry, demanding customers was particularly distressing. It was common for participants to minimize their symptoms or push past their emotions in order to continue working.

Sometimes I cry. My patient was like, “Are you okay?” You are crying because of your depression. Why is it like this? Life is so hard... so I just cry in the corner. (Caregiver, female, age 50–54)

As for me, my anxiety is like the ones mentioned earlier, I just cry when I go to work... I was also really burnt out, as if I couldn’t take it anymore. I’m not the type who complains

at work. I’m not the type who is always absent from work, but at that time, it really felt like I don’t want to go into work anymore. (Caregiver, female, age 45–49)

I’ve had customers kind of berate me a little bit sometimes and sort of give that verbal pressure on the things that they want. There were moments, where it was so severe where I ended up, well at the time, it kind of felt like I was having a heart attack... my heart was pounding and everything. But looking back on it now, I feel like it might have been like minor cases of a panic attack. (Retail worker, male, age 25–29)

Physical health issues

In addition to mental health problems caused by work- and pandemic-related stress, participants faced numerous health issues. Participants reported a range of negative physical health effects of work-related stress, including poor sleep and eating habits, weight gain, pain, and migraines. Additionally, participants who were immunocompromised or had existing comorbidities described being especially hypervigilant about taking measures to protect their physical health.

I think there are points where you kind of see yourself... when things are quiet you’re just kind of like, Oh my God, I am not okay. You know, and then you start not sleeping, and then you start eating weird, and you start eating what you can... like the health stuff goes up and down. (Paraeducator, female, age 30–34)

As for wellness, I just have a bit of a migraine. I’m crying so much because my vein in my head here is swollen and then my migraine is already hurting. I’ll just close my eyes and then relax, inhale, exhale, that’s it. Then I’ll just take a shower, wash my face so they won’t notice that I’m crying. (Caregiver, female, age 45–49)

Some participants contracted COVID-19, or knew of coworkers who continued working despite testing positive for the virus, and continued to work out of economic necessity.

It happened during December when I was working with a patient... I didn’t think that my patient had COVID, and she tested positive. After that, she infected me with COVID. We were both quarantined for 20 days. I still work even though I got sick and then that was the worst thing that happened in my life because I didn’t know what would happen to me. (Caregiver, female, 60–64)

And most of my staff came back positive still just because they wanted to go back to work, because they needed money you know it’s like, that’s their paycheck so it’s a struggle to be like, Oh just come back when you’re negative. They’re like, I don’t have money, you know, like,

I have to come back. So they just like mask up. But now that the [indoor] mask [mandate] is gone, you know, like we just all kind of just do our best. (Child care worker, female, age 30–34)

Discussion

The purpose of this study was to examine the work-related health stressors and consequences of the COVID-19 pandemic for Filipino American frontline workers through the lens of racial capitalism. The first two themes highlight the economic and occupational conditions as well as experiences of racism that shaped the nature and severity of stressors Filipino American frontline workers faced. The third theme captures the physical and psychological toll these pandemic stressors took on workers' well-being.

The first theme presents emergent as well as existing occupational stressors that became magnified during the pandemic. Although the increase in employee workload occurred across various industries, occupational and organization hierarchies exposed lower-status frontline workers (e.g., nurses, para educators, in-home caregivers) to greater health risks and stressors compared to higher-status workers (e.g., doctors, teachers, remote workers). This finding aligns with the perspective that workers deemed “essential” during times of crisis, and whose health and safety are most “at risk,” are often those whose labor is undervalued (41). Workers took on additional tasks well-beyond their traditional scope of work, often with minimal organizational or systemic support and a lack of appropriate resources to do their jobs safely. Along these lines, many workers felt inadequately protected from COVID-19 as many employers failed to provide appropriate PPE and testing options for frontline workers. These factors profoundly affected nurses, for example, who often shoulder the majority of bedside care for acutely ill patients. In response, workers within formal organizations and industries (e.g., healthcare, education) grew critical of government, industry, and organizational leaders who created the policies that dictated procedures workers followed but were disconnected from actual conditions on the frontlines that affected their workload, health, and safety.

Along lines of occupational hierarchy, caregivers within informal employment arrangements were provided with even fewer health and safety protections (e.g., sick leave), and many paid out-of-pocket to purchase their own PPE and took time during non-work hours to get tested. With the exception of unionized workers, most workers were not financially compensated, via hazard pay, nor informed of their rights to sick leave or other benefits, despite additional work and expanded responsibilities at work (28).

A chilling consequence of COVID was greater exposure to workplace trauma. The study findings provide further empirical

data to affirm journalistic accounts of COVID-related trauma and its effects on healthcare workers (42). For those in healthcare and other industries, workplace trauma and employer's handling of it encouraged some workers to resign.

The surge in pandemic-related anti-Asian hate incidents across the U.S. has caused fear and distress for many Asian Americans. For Filipino American frontline workers, their inability to work from home inherently exposed them to greater risk of discriminatory encounters both on the job as well as commuting to and from work. The second theme presents specific accounts of racialized discrimination and violence Filipino American frontline workers encountered on and off the job. Participants described vivid encounters of physical assault, verbal harassment, and being shunned. These findings are consistent with data from Stop AAPI Hate National Report (12) that describe verbal harassment, physical assault, and avoidance or shunning as the most common anti-Asian hate incidents. Racism targeting Filipino American healthcare workers further underscores their racialization as “disease carriers,” tied to a longer history of Asian Americans as “yellow peril” (29, 43).

Notably, the participants who reported experiences of physical assault in our sample were older migrant women, and were often targeted while in transit to their place of employment, including several instances that occurred while taking public transportation. Existing data also shows that Asian American women are more likely to report harassment in public (12), with media reports highlighting the vulnerability of older Asian victims (44). Though Wu et al. (45) found that U.S-born Asian Americans were more likely to report experiences of racial discrimination compared to Asian immigrants, our participatory study provided much-needed qualitative evidence to illustrate some of the effects on populations underrepresented in research, including older Asian migrants.

The third theme presents a range of mental and physical health problems linked to pandemic-related stressors. Anxiety, depression, panic, and burnout were common psychological struggles. In particular, an overwhelming and constant sense of anxiety plagued participants, who worried about the ability to continue working and providing for family as well as protecting family members' from contracting the COVID-19. The prospect of falling ill was not merely a threat to their health as individuals, but endangered the economic stability and well-being of their families. The anxiety was compounded for those with multiple family members who were part of the essential workforce. The obligation to protect the family's health was also accompanied by feelings of guilt tied to the occupational hazards they assumed in their line of work that put them and their family in harm's way. The anxiety of contracting COVID-19 was exacerbated for precarious workers, particularly those in exploitative arrangements and who lacked access to healthcare, employment benefits, and other protections. The

stress of trauma exposure also contributed to feelings of anxiety and a sense of foreboding. These findings provide qualitative detail and nuance to results from other studies that have explored the psychological toll of working during the pandemic (46, 47).

Furthermore, many workers dealt with their psychological symptoms while on the job, and the ongoing stress compromised workers' ability to cope, which was further eroded by their sense of isolation. Prior research has shown avoidance as a coping strategy among Filipino Americans mediated the link between racism-based stress and negative psychosocial outcomes (48). Applied to Filipino American frontline workers, the desire to avoid negative emotions allows for the ability to continue working yet the cumulative stress can contribute to adverse psychological health. Moreover, the stress of frontline work during the pandemic, combined with lack of access to health-promoting activities, led to a spiraling of engaging in unhealthy behaviors (e.g., poor diet and sleep) that deteriorated one's physical health. Other studies have shown this pattern among the general population (49, 50).

Implications

The study findings inform a number of recommendations for policy and research. First, frontline workers need expanded protections and benefits, such as equitable access to appropriate PPE and COVID-19 vaccines as well as health insurance and paid sick leave, in order to ensure worker health and safety. Avenues for pursuing these protections and benefits include (a) increasing the state's capacity to enforce laws that ensure employer accountability and minimize exploitation, and (b) greater worker representation through unions. Second, the pervasiveness of racialized hate and discrimination calls for multi-pronged violence prevention efforts, which include policies, interventions, and education around public safety, particularly mindful of the needs of women, migrants, and the elderly. Third, given overwhelming distress and psychological problems caused by the pandemic, increased access to mental health care that is culturally and linguistically accessible remains a priority. Finally, the study's focus on Filipino American frontline workers underscored the need to disaggregate data of Asian Americans by ethnic group in order to provide clarity and nuance in understanding disparities within the broader Asian American population.

Limitations

Although the qualitative design allowed for an in-depth exploration of the experiences and contexts that shaped Filipino

American frontline workers' health-related risks and effects of the pandemic, the findings cannot be generalized broadly to all Filipino American frontline workers. The majority of participants were female, potentially omitting gendered experiences of male and non-binary or transgender workers. Future research should strive to reflect more equitable gender representation. In addition, reliance on convenience and snowball sampling further limited comparisons with Filipino American frontline workers beyond the migrant generation. An analysis exploring whether there are differences between migrant- and U.S.-born workers merits further investigation. Finally, though the analysis describes some distinctions between workers' conditions by industry, an analysis that accounts for occupational and industry distinctions could inform more specific guidelines to effect change in particular industries and labor contexts.

Conclusion

Despite discourse that portrays frontline workers as "pandemic heroes," people of color, migrants, and women are disproportionately represented across this segment of the labor force, with many facing prior social and economic disadvantages that were exacerbated with the onset of the COVID-19 pandemic. The framework of racial capitalism is useful for understanding how the pandemic shaped experiences of racialized and class-based oppression for Filipino American frontline workers. The current study findings can inform interventions and policies to improve health, work environments, and labor conditions in order to support this population and others that are disproportionately affected by current and future global crises.

Data availability statement

The datasets presented in this article are not readily available because use of data must be approved by the study's community partner. Requests to access the datasets should be directed to Cindy.Sangalang@luskin.ucla.edu.

Ethics statement

The studies involving human participants were reviewed and approved by UCLA Office of the Human Research Protection Program (OHRPP). The Ethics Committee waived the requirement of written informed consent for participation.

Author contributions

CS conceptualized the study (along with community partners), led the data collection (along with community partners), analyzed the data, and drafted the manuscript.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The experience of hate incidents across racial and ethnic groups during the COVID-19 pandemic

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Introduction: Racism is a root cause of ill health for communities of color, and hate incidents are one manifestation of racism. Marginalized racial and ethnic groups, including but not limited to Asian Americans, have been the target of highly publicized violence, hate, and discrimination which has been amplified during the COVID-19 pandemic.

Objectives: This paper investigates (1) the prevalence of hate incidents across racial and ethnic groups, and (2) the relationship between race and ethnicity and hate incidents during the first year of the COVID-19 pandemic. We also seek to (3) situate study findings within theories of racism.

Methods: This study utilizes national data from the Understanding America Study (UAS) COVID-19 Longitudinal Survey from June 10, 2020 to March 30, 2021 ($n = 8,436$). Hate incidents in six categories were examined: being treated with less courtesy, receiving poorer service, others acting as if they were not smart, others acting as if they were afraid of them, being threatened or harassed, and experiencing any of the previous categories of hate incidents. Main analyses were conducted via population averaged logistic panel regression.

Results: The majority of members of all six marginalized racial and ethnic groups reported at least one hate incident during the first year of the COVID-19 pandemic. In addition, all marginalized racial or ethnic groups had statistically significant higher odds of experiencing at least two categories of hate incidents compared to white individuals. Asian, AI/AN, Black, and Multiracial groups had significantly higher odds of experiencing each category of hate incident. All marginalized racial and ethnic groups had significantly higher odds of receiving poorer service and others acting as if they were afraid of them.

Conclusion: All marginalized racial and ethnic groups experienced significant levels of hate incidents within the first year of the COVID-19 pandemic.

The public health community must continue to research, monitor, treat, and prevent hate incidents as a public health issue while recognizing the social and historical contexts of structural and interpersonal racism in the US.

KEYWORDS

racism, discrimination, hate incidents, hate crimes, race, violence, COVID-19

Introduction

Since the beginning of the COVID-19 pandemic in the United States (US), anti-Asian hate has been on the rise (1–3). A number of high-profile acts of violence, including the March 2021 shooting in Atlanta, GA, have deeply impacted Asian American communities. According to a 2021 Pew Research poll, 32% of Asian American adults report fears of being threatened or attacked, and 81% say that they believe that violence against them is increasing (4). From March 2020 to December 2021, nearly 11,000 hate incidents against Asian Americans and Pacific Islanders (AAPIs) have been reported to Stop AAPI Hate, a community and academic-based reporting site (3).

In this paper, we rely on the term “hate incident” because of its use in the national dialogue by community-based organizations (such as Stop AAPI Hate), news sites, and the general public during the COVID-19 era (5). As such, we hope this research will be more accessible to community organizations and members of the public who wish to prevent and address hate incidents. Unlike hate crimes, which are criminal and often violent acts motivated by bias, hate incidents represent a wider array of discriminatory acts (5, 6). Hate incidents do not have to meet legal definitions of a crime and therefore are not limited to violence, threats, or property damage (5, 6). In addition, the term allows for examination of hate outside the framework of the criminal and carceral systems. This is important because these systems place additional harm on marginalized communities, which some community leaders believe leads to police violence, higher incarceration rates, fear, and an investment in policing and incarceration instead of community resources (7–9). By relying solely on the criminal system to prevent and solve hate incidents, communities may be exposed to a double jeopardy of safety concerns—experiencing harm from both hate incidents and encounters with police attempting to address these incidents.

Hate incidents against Asian Americans have rapidly risen in the US, and this spike can be linked to the socio-political discourse around the COVID-19 pandemic, which began in early 2020. COVID-19 was deemed the “Chinese Virus” in the media on the federal level and beyond, thus

blaming people of Asian descent for a global pandemic (10–13). This aligns with a long history of stigmatization of marginalized groups during major disease outbreaks, such as Africans and Ebola (14, 15), gay and bisexual men and HIV/AIDS (16, 17), and Asian Americans and SARS (15, 18). This stigmatization of Asian Americans directed the US public’s fear, anger, and distrust around COVID-19 toward this group, fueling a surge of hate incidents and racist rhetoric. An analysis of US race-related Tweets comparing November 2019 (pre-COVID-19 pandemic) to March 2020 found that negative Tweets about Asians increased by 68.4%, making up approximately one out of six of total negative tweets in March 2020 (13). This national narrative has persisted, with one national poll finding that as of June 2021, most Americans (58%) believed that COVID-19 was designed in a Chinese laboratory (19). According to a national poll by the LAAUNCH Foundation, even more people blame individuals of Asian descent for the COVID-19 pandemic in 2022 than in 2021 (20).

Yet, these racist beliefs and attacks are not new. It is imperative to recognize that the underlying forces of structural and interpersonal racism existed before the COVID-19 pandemic. Racism is deeply ingrained in our systems, institutions, and interpersonal interactions (21). It is rooted in anti-Blackness, anti-Indigeneity, and the continued impacts of imperialism, settler colonialism, and slavery. For Asian Americans, structural and interpersonal racism and violence can be traced back for centuries (22, 23). Examples range from Yellow Peril and the Chinese Exclusion Act, Japanese Incarceration during WWII, the murder of Vincent Chin, post-9/11 hatred against Muslim Americans and South Asians, to the deportation of Southeast Asian refugees who originally migrated to the US due to American wars abroad (23).

Anti-Asian racism in the COVID-19 context is intertwined with other systems of oppression which facilitate this negative racialization. For instance, orientalism is the stereotyped way in which those in the “West” otherize, dehumanize, and take away power from the “East,” as informed by imperialism and colonialism (23–25). Orientalism can be clearly seen in the racialization of the COVID-19 virus (25). Xenophobia also interacts with racism; Asian Americans are viewed as “perpetual

foreigners,” even though many Asians have been in the US for generations (10). This also aligns with racial triangulation theory, which posits that racial groups are not only deemed inferior or superior, but also as outsiders or insiders (10, 26, 27). Asian Americans, in particular, are seen as outsiders to US society (10, 26, 27). Finally, racial capitalism plays a role. Racial capitalism explains how racism and capitalism reinforce one another, as well as a recognition of how race is central to hierarchy in capitalist economies (28, 29). For instance, the aforementioned example of the murder of Vincent Chin was motivated by anti-Japanese and anti-Asian sentiment during a time when major layoffs in the US automotive industry were blamed on the success of Japanese companies, illustrating how socioeconomic and political factors are crucial parts of hate incidents (10, 30). Although socioeconomic factors are deeply interwoven into racial health disparities, the distinct experience of institutional, cultural, and interpersonal racism—outside of socioeconomic factors—is at the root of racial differences in health outcomes (31–34).

Even before the pandemic began in 2019, a vast majority of Asian American adults (76%) reported experiencing discrimination because of their race or ethnicity (35). However, Asian Americans are not the only ones who have experienced elevated hate during the pandemic. Black Americans have experienced years of highly publicized, racially motivated violence and murders committed by police (36, 37). The epidemic of missing and murdered Indigenous women, girls, and Two-spirit people has continued, as highlighted by the Urban Indian Health Institute and other researchers (38–40). A report from the Human Rights Campaign highlights that 2020 and 2021 were the deadliest years thus far for transgender and gender diverse people, especially for Black and Latinx transgender women (22). Over half of Native American, Black, and Hispanic workers have jobs which require them to work in close proximity to others during the pandemic, increasing their potential exposure to COVID-19 (41, 42). For example, there have been numerous reports of frontline workers such as healthcare, grocery store, and transportation workers attacked on the job due to COVID-19-related disputes (43). Theoretically, greater exposure to others could potentially increase exposure to hate incidents and violence during a time of heightened public fear, anger, and distrust.

These examples of discrimination and violence highlight how hate incidents can be considered both as social determinants of health (44) and as health outcomes themselves. Hate incidents can be health outcomes, as violent acts which result in bodily harm or death (44). Hate incidents can also impact the health of communities, with one act of hate potentially having a spillover health effects on members of a marginalized racial group as a whole (37). Exposure to hate incidents, as well as the anticipation of hate incidents, can act as social determinants, influencing health through pathways of psychosocial stress (44, 45). For instance, the weathering

hypothesis theorizes that the stress of continued exposure to inequality results in health disparities (45). Hate incidents during the COVID-19 pandemic may pose even greater risks, with the potential for the spread of the disease during physical harassment due to close proximity, as well as posing a greater burden on already overwhelmed health systems. Although there is research highlighting the disproportionate mental health impact of hate incidents on Asian Americans during the COVID-19 pandemic (46, 47), it is important to measure the extent to which all marginalized racial and ethnic groups are impacted by hate incidents.

We use the term “marginalized racial and ethnic groups” in this paper to call out the act of marginalization enacted upon communities of color by systems dominated by white supremacy (48). This term and the concept of marginalization has been utilized in other papers on health inequities (33, 49, 50). Marginalized racial and ethnic groups include people of color of various backgrounds, who are subject to structural racism and discrimination. As such, all marginalized racial and ethnic groups are vulnerable to the deleterious effects of racism, and hate incidents occurring during the COVID-19 pandemic across all marginalized racial and ethnic groups are deserving of attention from the public health community. However, few other studies have investigated the experience of hate incidents during the COVID-19 pandemic across multiple racial and ethnic groups (51). Many studies focus only on COVID-related discrimination, while others may focus only on Asian Americans or a limited number of racial/ethnic groups (1, 51).

This study fills this gap by investigating the relationship between race and ethnicity and hate incidents in the year after the start of the COVID-19 pandemic in the US. Utilizing publicly available data from the University of Southern California’s Understanding America Study’s (UAS) COVID-19 Longitudinal Survey (47), we investigated three aims. First, we describe the prevalence and distribution of hate incidents across racial and ethnic groups during the start of the COVID-19 pandemic. Second, we evaluate our primary research aim: evaluate if members of six marginalized racial and ethnic groups [Asian, American Indian and Alaskan Native (AI/AN), Black, Hispanic, Multiracial, Native Hawaiian and Pacific Islander (NH/PI)] have significantly higher odds of experiencing six categories of hate incidents compared to white participants (being treated with less courtesy, receiving poorer service, others acting as if they were not smart, others acting as if they were afraid of them, being threatened or harassed, and experiencing any of the previous categories of hate incidents). We hypothesize that Asian Americans and all other marginalized racial and ethnic groups included in this study will have significantly higher odds of experiencing hate incidents during the COVID-19 pandemic compared to white participants. Finally, we seek to situate our study findings within theories of racism and white supremacy, as well as the sociopolitical context of the study time period.

Methods

Data source

The UAS COVID-19 Longitudinal Survey is part of the larger UAS. The UAS is a national, probability-based online panel of adults in the US which began in 2014 (52). Participants were recruited *via* address-based random sampling; with ~9,000 participants and 7,400 households participating (52). Any adults 18 years of age and older in a contacted household who can understand English or Spanish were eligible to participate. Participants respond to surveys online, and households without internet access were provided internet and a tablet or computer for the duration of the study (52). Participants are compensated \$20 for every 30 min of survey time.

UAS began the COVID-19 longitudinal survey on March 10, 2020, when current UAS participants were asked to opt in to the COVID-19 survey (47). Survey waves occurred every 14- days, with participants having up to an additional 14 days to respond to the survey. Therefore, each survey represents experiences of a panel participant over the last 14–28-days since their previous survey (47). In this study, 18 waves in total are included, representing participants' experiences from June 10, 2020 to March 30, 2021. Waves 1–6 and 9 were excluded because they did not include the main outcome questions about hate incidents. Data for wave 26 and beyond were excluded to ensure consistency in the time frame asked by the survey questions, because the survey switched from biweekly to monthly and stand-alone surveys. This study includes $n = 8,436$ unique participants and $n = 155,472$ observations.

Variables

Outcome: Hate incidents

The UAS' score survey modules, which are repeated in each survey wave, include questions about experiences of discrimination and hate (53). The survey questions below encompass five different types of hate incidents described below, including but not limited to being targeted by violence or harassment.

The survey asks participants, “*Since [date of previous survey], how often have any of the following things happened to you in your day-to-day life because of your actual or perceived race, ethnicity, age, gender, health, income, education, religion, or some other personal characteristic?*” The following situations are provided: (a) “*You were treated with less courtesy or respect than other people,*” (b) “*You received poorer service than other people at restaurants or stores,*” (c) “*People acted as if they thought you were not smart,*” (d) “*People acted as if they were afraid of you,*” and (e) “*You were threatened or harassed.*” Participants can respond with “*Almost every day,*” “*At least once a week,*” “*A few times a month,*” “*Once a month or less,*” or “*Never.*” These questions were

TABLE 1 Descriptive demographic frequencies of survey sample.

Variable	Category	N(%) or mean (SD)
Race and ethnicity	Non-Hispanic (NH)	431 (5.1%)
	Asian	
	NH American	78 (0.9%)
	Indian/Alaskan	
	Native (AI/AN)	
	NH Black	673 (8.0%)
	Hispanic	1,432 (17.0%)
	NH Multiracial	368 (4.4%)
	NH Native	26 (0.3%)
	Hawaiian/Pacific Islander (NH/PI)	
Gender	NH white	5,428 (64.5%)
	Female	4,973 (59.1%)
	Male	8,414 (41.0%)
Age		51.27 (± 16.1)
Immigrant status	Non-immigrant	4,528 (53.8%)
	First generation	962 (11.4%)
	Second generation	1,278 (15.2%)
	Third generation	1,482 (17.6%)
	Unknown	308 (3.7%)
Citizenship status	US citizen	8,121 (96.5%)
	Non-US citizen	293 (3.5%)
Education	Less than high school	42 (5.4%)
	High school graduate or GED	1,342 (16.8%)
	Some college-no degree	1,827 (22.8%)
	Associate degree	1,165 (14.5%)
	Bachelor's degree	1,967 (24.6%)
	Graduate degree	1,021 (12.7%)
Currently working	No	3,919 (46.6%)
	Yes	5,380 (64.0%)
Essential worker	Yes	4,049 (49.4%)
	No	2,468 (30.1%)
	Unsure	1,675 (20.5%)
Household income	Less than \$30,000	2,384 (28.3%)
	\$30,000 to \$59,999	2,568 (30.5%)
	\$60,000–\$99,999	2,463 (29.3%)
	\$100,000–\$149,999	1,485 (17.7%)
	\$150,000 or greater	1,150 (13.7%)

adapted from the Everyday Discrimination Scale (Short Version) (EDS) (54), a widely used scale which is validated among adults of multiple race and ethnicities (55, 56). Hate incidents and everyday discrimination overlap in definition and can be similar. We interpreted the EDS as various categories of hate incidents, in order to align with national dialogue around hate incidents

and hate crimes during the COVID-19 pandemic. Previously in the literature, scholars have categorized results from the EDS as hate-motivated crimes or incidents (2).

Participants were also asked to choose up to two main reasons for all the hate incidents they selected previously. We chose to include all hate incidents for analysis, even if participants attributed the incident to an identity other than their race or ethnicity. This was done to evaluate the distribution of all hate incidents across racial and ethnic groups. A key principle of Public Health Critical Race Praxis (PHCRP) is the primacy of racialization, what states that racialization is foundational to inequities in the US (57). Furthermore, following tenets of PHCRP, Intersectionality (58–60), and Critical Race Theory (61), we believe that racialization is inextricable from participants' experience of other social identities (e.g., gender, age, income). Therefore, even hate incidents that can be attributed to another identity are still shaped by how a person is racialized. Respondents to the EDS may struggle to attribute their experiences with discrimination to a single identity; one study found that 43% of participants had difficulty choosing one main reason for their discrimination when filling out the EDS (62). Therefore, when participants must choose one reason for the discrimination they experience, results may be underestimated or biased (62). To prevent these issues, scales have been developed that are "attribution-free," instead basing analyses on the self-report of sociodemographic identities in a separate section of the survey, similar to how we approached our analysis (63).

For purposes of analysis, all hate incident outcome variables were dichotomized into "0 = No" for participants who responded "Never," and "1 = Yes" for participants who reported any frequency of hate incidents since their last survey. An additional outcome variable was created which described if a participant experienced any of the above five categories of hate incidents, resulting in six total outcome variables. This variable was also dichotomized; if a participant selected "Never" for all five hate incident categories in the EDS, they were labeled as "0 = No." Participants that selected a response other than "Never" for one or more hate incident categories were labeled as "1 = Yes."

Exposure: Race/ethnicity

Demographic variables, including race and Hispanic ethnicity, are collected quarterly as part of the wider UAS study, and are included in the longitudinal dataset (53). In the UAS data, racial categories include white, Asian, Black, AI/AN, and NH/PI. Participants self-select their racial and ethnic group and are able to check multiple categories; those who did so are categorized as Multiracial. The UAS also asks for Hispanic ethnicity separately from race. In this analysis, participants were placed into seven exclusive racial and ethnic categories: non-Hispanic Asian, non-Hispanic AI/AN, non-Hispanic Black, non-Hispanic Multiracial, non-Hispanic NH/PI, non-Hispanic

white, and Hispanic. In this paper, we will refer to these groups from this point forward as Asian, AI/AN, Black, Multiracial, NH/PI, white, and Hispanic, respectively. In this study, we conceptualize one's race and/or ethnicity as exposing them to racialization and multi-level forms of racism throughout their lives. Racialization, or the process in which people or groups are seen and defined in racial terms by others (64), patterns the way that a person experiences and is exposed to racism, discrimination, and violence.

Covariates

Additional confounders were adjusted for based on their theoretical links to the exposure (race and ethnicity) and the outcome (experience of hate incidents). There may be additional, unadjusted confounders which were not collected by the UAS. Adjusted confounders were: binary gender (male, female), age (continuous), immigration status (non-immigrant, first generation immigrant, second generation immigrant, third generation immigrant, unknown), education status (less than high school, high school graduate or GED, some college—no degree, Associate degree, Bachelor's degree, Graduate degree), current working status (yes, no), and household income (<\$30,000; \$30,000–\$59,999; \$60,000–\$99,999; \$100,000–\$149,999; \$150,000 or greater).

Analysis

Statistical analyses were conducted using STATA 16 (65). In aim 1, descriptive statistics calculated both the overall frequency and between frequency of each hate incident by racial and ethnic group; these were tabulated taking into account the panel nature of the data. The primary aim, aim 2, was tested with a series of population-averaged logistic panel regressions with robust standard errors and exchangeable correlation, adjusted for observed confounders. The panel regression model accounted for clustering by participant id and wave, and panel robust standard errors accounted for heteroskedasticity. The population-averaged logistic regression was selected because it provides the interpretation of the odds of a given category of hate incident for the average member of a given marginalized racial/ethnic group in comparison to the average white participant (the reference group), adjusted for the observed confounders listed above.

Results

Table 1 describes the characteristics of the study sample. Participants were 64.51% non-Hispanic white, 17.02% Hispanic, 8.00% Black, 5.12% Asian, 4.37% Multiracial, 0.93% AI/AN, and 0.31% NH/PI. The average age was 51.27 (SD = 16.06).

TABLE 2 Number of hate incidents reported in last 14–28 days (since the time of the previous survey), by hate incident category and race/ethnicity (total $n = 155,472$ observations).

	Less courtesy	Poorer service	Not smart	Afraid of you	Threatened or harassed	Any hate incident
Asian	1,152 (14.5%)	894 (11.2%)	920 (11.6%)	833 (10.5%)	683 (8.6%)	1,410 (17.7%)
AI/AN	198 (14.8%)	178 (13.3%)	179 (13.4%)	163 (12.2%)	122 (9.1%)	233 (17.5%)
Black	1,748 (14.6%)	1,423 (11.9%)	1,511 (12.7%)	1,252 (10.5%)	746 (6.3%)	2,214 (18.6%)
Hispanic	2,773 (11.7%)	2,226 (9.4%)	2,500 (10.6%)	1,910 (8.1%)	1,452 (6.2%)	3,565 (15.1%)
Multiracial	838 (13.0%)	538 (8.4%)	734 (11.4%)	538 (8.4%)	363 (5.7%)	1,105 (17.2%)
NH/PI	96 (21.9%)	88 (20.1%)	72 (16.4%)	77 (17.5%)	44 (10.0%)	111 (25.3%)
White	8,491 (8.2%)	5,197 (5.0%)	8,153 (7.9%)	5,142 (5.0%)	3,670 (3.5%)	12,430 (12.0%)
Total	15,296 (9.8%)	10,544 (6.8%)	14,096 (9.1%)	9,915 (6.4%)	7,080 (4.6%)	21,068 (13.6%)

TABLE 3 Aim 1: Number of participants who reported at least one hate incident during the duration of the study (June 10, 2020 to March 30, 2021), by hate incident category and race/ethnicity ($n = 8,436$ participants).

	Less courtesy	Poorer service	Not smart	Afraid of you	Threatened or harassed	Any hate incident
Asian	225 (52.2%)	173 (40.1%)	187 (43.4%)	176 (40.8%)	138 (32.0%)	260 (60.3%)
AI/AN	40 (51.3%)	37 (47.4%)	36 (46.2%)	35 (44.9%)	32 (41.0%)	46 (59.0%)
Black	366 (54.4%)	326 (48.4%)	332 (49.3%)	277 (41.2%)	213 (31.7%)	428 (63.6%)
Hispanic	659 (46.0%)	540 (37.7%)	601 (42.0%)	470 (32.8%)	394 (27.5%)	787 (55.0%)
Multiracial	184 (50.0%)	137 (37.2%)	167 (45.4%)	139 (37.8%)	114 (31.0%)	217 (59.0%)
NH/PI	16 (61.5%)	14 (53.9%)	13 (50.0%)	12 (46.2%)	10 (38.5%)	17 (65.4%)
White	1,965 (36.2%)	1,385 (25.5%)	1,856 (34.2%)	1,323 (24.4%)	1,115 (20.5%)	2,588 (47.7%)
Total	3,455 (41.0%)	2,612 (31.0%)	2,443 (29.0%)	2,443 (28.82)	2,016 (23.9%)	4,343 (51.5%)

59.10% of participants were women. Additional descriptors can be found in [Table 1](#).

Aim 1: Prevalence of hate incidents across racial and ethnic groups

[Tables 2, 3](#) show descriptive statistics of our main outcome variables: six categories of hate incidents. [Table 2](#) demonstrates the percentage of the time that a hate incident was reported over the course of the study time period, by hate incident category as well as racial and ethnic group. [Table 3](#) describes the number of participants who reported a given hate incident at least once sometime during the duration of the panel, by hate incident category as well as racial and ethnic group. Both tables demonstrate that marginalized racial and ethnic groups generally report elevated levels of experiencing hate incidents compared to white participants on the event level as well as on the respondent level, across the timespan of the panel.

For instance, out of all of the surveys waves conducted over the course of the study time period, Asian participants reported being threatened or harassed 8.6% of the time, compared to white participants who reported the same hate incident 3.5% of the time ([Table 2](#)). AI/AN participants reported being threatened or harassed 9.1% of the time, Black participants 6.3% of the time, Hispanic participants 6.2% of the time, Multiracial

participants 5.7% of the time, and NH/PI participants 10.0% of the time ([Table 2](#)).

Notably, the majority of participants in all marginalized racial and ethnic groups experienced at least one type of hate incident during the time period of the study ([Table 3](#)). 60.3% of Asian participants, 59.0% of AI/AN participants, 63.6% of Black participants, 55.0% of Hispanic participants, and 59.0% of Multiracial participants, and 65.4% of NH/PI participants reported at least one hate incident during the study time period, compared to 47.7% of white participants ([Table 3](#)). Around a third or more of all marginalized racial and ethnic group members experienced threats or harassment during the panel time period ([Table 3](#)). 32.0% of Asian participants, 41.0% of AI/AN participants, 31.7% of Black participants, 27.5% of Hispanic participants, 31.0% of Multiracial participants, and 38.5% of NH/PI participants reported being threatened or harassed, compared to 20.5% of white participants.

Aim 2: Odds of experiencing hate incidents by marginalized race and ethnic group

[Table 4](#) contains the results of the study's primary research question: Do marginalized racial and ethnic groups have

TABLE 4 Aim 2: Adjusted odds of marginalized racial or ethnic group participant experiencing given hate incident in last 14–28 days compared to non-Hispanic white participant.

		Less courtesy	Poorer service	Not smart	Afraid of you	Threatened or harassed	Any
Asian	OR (RSE)	1.6*** (0.2)	2.1*** (0.2)	1.3** (0.1)	1.9*** (0.2)	1.9*** (0.2)	1.4*** (0.1)
	95% CI	1.4–2.0	1.7–2.6	1.1–1.6	1.5–2.4	1.5–2.4	1.2–1.7
AI/AN	OR (RSE)	1.8** (0.4)	2.5*** (0.5)	1.6* (0.4)	2.7*** (0.6)	2.3*** (0.6)	1.5* (0.3)
	95% CI	1.2–2.7	1.6–3.8	1.1–2.5	1.8–4.2	1.5–3.7	1.0–2.1
Black	OR (RSE)	1.6*** (0.1)	2.1*** (0.2)	1.4*** (0.1)	2.0*** (0.2)	1.3* (0.1)	1.5*** (0.1)
	95% CI	1.4–1.9	1.8–2.5	1.2–1.6	1.7–2.4	1.1–1.6	1.3–1.7
Hispanic	OR (RSE)	1.1 (0.1)	1.4*** (0.1)	1.0 (0.1)	1.3** (0.1)	1.0 (0.1)	1.1 (0.1)
	95% CI	1.0–1.3	1.2–1.7	0.9–1.2	1.1–1.5	0.8–1.2	0.9–1.2
Multiracial	OR (RSE)	1.6** (0.2)	1.6*** (0.2)	1.4*** (0.2)	1.8*** (0.2)	1.5* (0.2)	1.5*** (0.1)
	95% CI	1.3–2.0	1.3–2.1	1.2–1.8	1.4–2.2	1.1–2.1	1.2–1.7
NH/PI	OR (RSE)	2.1 (0.8)	3.8*** (1.2)	1.7 (0.6)	3.6*** (1.3)	2.4* (1.0)	1.6 (0.6)
	95% CI	1.0–4.6	2.0–7.1	0.8–3.5	1.7–7.4	1.1–5.3	0.8–3.5

Bolded: statistically significant odds (p-value 0.05); *p-value 0.05, **p-value 0.01, ***p-value 0.001; OR, Odds Ratio; RSE, robust standard errors; CI, Confidence interval.

significantly higher odds of experiencing various hate incidents during the first year of the COVID-19 pandemic compared to white participants? All following results describe the odds of an average member of a given marginalized racial and ethnic group experiencing a hate incident since the last survey compared to the average white participant.

All racial and ethnic groups demonstrated significantly higher odds of experiencing hate incidents in multiple analyzed categories. A number of racial groups (Asian, AI/AN, Black, and Multiracial) demonstrated significantly higher odds in all six categories.

Namely, Asian participants had about twice the odds of receiving poorer service (OR = 2.07; 95% CI: 1.68–2.55; $p \leq 0.001$), others acting afraid of them (OR = 1.90; 95% CI: 1.54–2.36; $p \leq 0.001$), and being threatened or harassed (OR = 1.87; 95% CI: 1.48–2.37; $p \leq 0.001$), as well as elevated odds of experiencing any hate incident (OR = 1.41; 95% CI: 1.19–1.67; $p \leq 0.001$), and being treated as not as smart as others (OR = 1.31; 95% CI: 1.07–1.60; $p \leq 0.01$).

AI/AN participants had nearly three times the odds of others acting afraid of them (OR = 2.72; 95% CI: 1.75–4.23; $p \leq 0.001$), and more than twice the odds of receiving poorer service (OR = 2.48; 95% CI: 1.63–3.77; $p \leq 0.001$) and being threatened or harassed (OR = 2.30; 95% CI: 1.45–3.66; $p \leq 0.001$). They also had significantly elevated

odds of being treated with less courtesy (OR = 1.79; 95% CI: 1.20–2.66; $p \leq 0.01$), being treated as not as smart as others (OR = 1.64; 95% CI: 1.07–2.51; $p \leq 0.05$), and experiencing any hate incident (OR = 1.45; 95% CI: 1.004–2.09; $p \leq 0.05$).

Black participants had at least twice the odds of receiving poorer service (OR = 2.11; 95% CI: 1.80–2.48; $p \leq 0.001$) and others acting afraid of them (OR = 2.00; 95% CI: 1.69–2.38; $p \leq 0.001$). They also had significantly higher odds of being treated with less courtesy (OR = 1.62; 95% CI: 1.39–1.87; $p \leq 0.001$), experiencing any hate incident (OR = 1.45; 95% CI: 1.27–1.65; $p \leq 0.001$), being treated as not as smart as others (OR = 1.36; 95% CI: 1.16–1.58; $p \leq 0.001$), and being threatened or harassed (OR = 1.30; 95% CI: 1.06–1.60; $p \leq 0.05$).

Multiracial participants had significantly higher odds of others acting as if they were afraid of them (OR = 1.76; 95% CI: 1.41–2.19; $p \leq 0.001$), receiving poorer service (OR = 1.64; 95% CI: 1.31–2.05; $p \leq 0.001$), being treated with less courtesy (OR = 1.58; 95% CI: 1.30–1.91; $p \leq 0.01$), being threatened or harassed (OR = 1.49; 95% CI: 1.09–2.05; $p \leq 0.05$), experiencing any hate incident (OR = 1.46; 95% CI: 1.23–1.73; $p \leq 0.001$), and being treated as not as smart as others (OR = 1.44; 95% CI: 1.19–1.76; $p \leq 0.001$).

NH/PI participants demonstrated significantly higher odds in three hate incident categories. They had over three times the odds of receiving poorer service (OR = 3.76; 95% CI: 1.98–7.13;

$p \leq 0.001$) and others acting as if they were afraid of them ($OR = 3.57$; 95% CI: 1.72–7.39; $p \leq 0.001$), as well as over two times the odds of being threatened or harassed ($OR = 2.40$; 95% CI: 1.08–5.32; $p \leq 0.05$). Hispanic participants had significantly higher odds in two categories: receiving poorer service ($OR = 1.40$; 95% CI: 1.18–1.67; $p \leq 0.001$) and others acting as if they were afraid of them ($OR = 1.28$; 95% CI: 1.10–1.49; $p \leq 0.01$).

All marginalized racial and ethnic groups had significantly higher odds of receiving poorer service and others acting as if they were afraid of them. Five out of six of these groups had significant odds of being threatened or harassed (Asian, AI/AN, Black, Multiracial, and NH/PI). Four out of six of these groups (Asian, AI/AN, Black, and Multiracial) had significantly higher odds of experiencing the remaining hate incident categories: being treated with less courtesy and respect, others acting as if they were not smart, and experiencing any of the categories of hate incidents.

Discussion

Aims 1 and 2 discussion

This study demonstrates that during the first year of the COVID-19 pandemic, hate incidents were a significant and acute issue for individuals from marginalized racial and ethnic groups in comparison to white individuals. The prevalence of hate incidents was high, with the majority of members from marginalized racial and ethnic groups experiencing at least one type of hate incident during the study time period. Notably, Asian, AI/AN, Black, and Multiracial groups had significantly higher odds of experiencing every type of hate incidents examined in this study, but all marginalized racial and ethnic groups had significantly elevated odds in at least two hate incident categories. In addition, all six marginalized racial and ethnic groups had significantly higher odds of receiving poorer service and others acting as if they were afraid of them. Being threatened or harassed was also a crucial issue, with five out of six marginalized racial and ethnic groups experiencing significantly higher odds. Being threatened or harassed is the closest measured hate incident category to violence, and it has perhaps the most direct impact on physical, mental, and emotional health.

However, all hate incident categories have implications for the health of individuals and communities by making individuals feel unsafe or unwelcome in their day to day lives. The consequences of interpersonal hate incidents affect health through demonstrated theories such as weathering (45), embodied inequality (66), the minority stress model (67, 68), historical trauma (69), and the social-ecological model (70). Interpersonal hate incidents can cause poor health

through psychological, biological, behavioral, and healthcare access pathways on the individual and collective level (32). These health issues include worse outcomes in depression, anxiety, PTSD, blood pressure, inflammation, allostatic load, and sleep (34).

Aim 3: Theoretical and sociopolitical context of results

Overall, the results of this study reflect the reality of interpersonal hate, racism, and discrimination for marginalized racial and ethnic groups in the US during the COVID-19 pandemic. One might theorize that hate incidents during a pandemic would be minimal, since there are fewer opportunities to interact with others; however, this does not appear to be the case. Although Asian Americans have been in the spotlight for increased hate during the COVID-19 pandemic, particularly because many hate incidents against them are directly tied to COVID-19 itself, all marginalized racial and ethnic groups experienced hate incidents at elevated levels. Asian Americans had among the highest odds of being threatened or harassed, which could reflect these COVID-19-motivated hate incidents. Although hate incidents against other racial and ethnic groups may not have COVID-19 as a direct motivation, the COVID-19 pandemic nonetheless served as a backdrop for the hate incidents reported in this study's timeframe. In addition, the global recession, stay at home and social distancing orders, overwhelmed hospitals, and vaccine rollouts all likely shaped one's exposure to others, which subsequently shaped exposure to interpersonal hate incidents during the pandemic.

During the same time period, the US also underwent major sociopolitical shifts. Multiple events and trends relevant to racism and racial equity took place, including the Black Lives Matter protests, the continued murders of Black Americans at the hands of police, the 2020 Presidential election, the Capitol riots, the mass shooting in Atlanta, GA, and the Stop Asian Hate movement. These events likely shaped the way participants from marginalized racial and ethnic groups were perceived and racialized, as well as the nature and frequency of the hate directed toward them. In addition, racialized groups may have also been more vigilant toward acts of discrimination due to current events; this could have encouraged greater reporting of hate incidents and more groups speaking out about the racism they face in their day to day lives.

In addition, marginalized racial and ethnic groups across the country have come together through some of the largest organized protests against police violence, the carceral system, anti-Asian hate, immigrant detention centers, and more (71, 72). This community organizing presents a resistance to racist

systems and institutions (73). Together, activists, community members, and other stakeholders seek to re-imagine our collective futures through anti-racist praxis and community organizing (73). This presents a threat to traditional norms of white supremacy. As theorized by Dr. Tema Okun, fear is one characteristic of white supremacy culture (74). White supremacy seeks to make marginalized racial and ethnic groups afraid (74). This is accomplished through interpersonal racism such as microaggressions, violence, and hate incidents (74). This can be extended further to other abuses of power, such as structural violence and carceral systems (74). As such, punishment is used to create fear, on internalized, interpersonal, and structural levels. In times such as COVID-19 and other major epidemics and pandemics, fear is especially heightened, which leads to discrimination and prejudice against stigmatized groups (15). For instance, Asian Americans have once again entered the realm of “Yellow Peril,” in which they are negatively racialized as dangerous to the health of the nation, outside of their perceived status as the “Model Minority” (10, 24). We theorize that this results in the depth and breadth of hate incidents experienced across marginalized racial and ethnic groups during the first year of the pandemic that we see in the outcomes of this study.

Although the common time period of the COVID-19 pandemic underlies the data in this study, we must also acknowledge that hate incidents are situated in different historical and social contexts for each distinct marginalized racial and ethnic group. In fact, the contexts are likely different for ethnicities within racial groups as well. Centuries of structural and interpersonal racism create iterative cycles of false stereotypes and biases, which otherize and de-humanize members of marginalized racial and ethnic groups. These cycles and contexts are all unique for different racial and ethnic groups, even if they result in the same broader hate incident. Take, for instance, the hate incident category “people acted as if they were afraid of you,” which was significant across all marginalized groups. For Asian Americans, this can be traced not only to COVID-19-based fears, but also to a long history of Asians being seen as dangerous and perpetually foreign, such as through “Yellow Peril” and post-9/11 stereotypes. This belies Asian Americans’ perceived status as the “Model Minority” (22, 75). In fact, Asian Americans also had significantly higher odds of being seen as “not smart” compared to white Americans. These results reiterate the “Model Minority” label as a tool for white supremacy. It can be used to drive a wedge between Asian Americans and other people of color; however, it can also be quickly revoked once Asians pose a threat. For AI/ANs, Black Americans, Hispanics, Multiracial Americans, and NH/PIs, different stereotypes and biases underpin the same hate incident. For instance—AI/AN stereotypes of the “savage Indian” are rooted in colonialization (76). Stereotypes of Black Americans as violent and dangerous are born from the institution of slavery (77). Hispanic and Latin Americans

were labeled as bringing drugs, crime, and rape during the 2016 presidential election due to racism and xenophobia (78). In addition, intersecting power structures (e.g., cisheterosexism, capitalism, ablism) may change the experience of these hate incidents if one has multiple marginalized identities. Ultimately, although these contexts and experiences vary across racial, ethnic, and cultural backgrounds, the deep roots of white supremacy and racism nonetheless underpin all of these acts of hate.

Limitations and strengths

There are a number of limitations to this study. As with any non-randomized study, unmeasured confounders may introduce bias. Both the NH/PI and AI/AN groups had small sample sizes, creating wide confidence intervals. These confidence intervals at times overlapped with the confidence intervals of the other groups. In addition, the UAS survey is conducted in English and Spanish only. Therefore, those who speak languages other than English and Spanish were excluded from the study. As a result, the odds ratio estimations could be conservative, as language is one way in which groups are racialized and could be a crucial motivator for hate. In particular, many hate incidents against Asian Americans have targeted elderly, low-income, immigrant individuals who primarily speak languages other than English.

We examined six marginalized racial and ethnic groups; however, we did not disaggregate these groups further by ethnicity. For instance, the disaggregation of the Asian racial group may result in varying outcomes for East Asian vs. South Asian and Southeast Asian ethnicities because of the different ways these groups are racialized. Even though COVID-19 is linked directly to sinophobic rhetoric, other Asian ethnic groups have been targeted for violence and hate as well.

It is also possible that misclassification bias could have occurred. Standard racial questions are often ill-equipped to capture the full range of racialization in the US. For example, individuals from the Middle East and North Africa are often told to check “white” as a race despite being marginalized in the US. The Asian racial group is also widely diverse, but often misinterpreted as representing only East Asians. This could result in non-East Asians selecting other racial categories. In addition, Hispanic ethnicity is asked separately from race. In this analysis, Hispanics of any racial background were put into one category, potentially impacting that group’s outcomes. Likewise, the Multiracial group is extremely diverse, representing people of various racial and ethnic backgrounds. As a result, it is difficult to know exactly how participants in this group have been racialized.

Another limitation is our analytic decision to utilize the EDS in an atypical way. The EDS asks respondents to choose a main reason for their experiences with discrimination from a list of social identities or other physical characteristics. However, based on precedent from other surveys (62), we chose to include all hate incidents for analysis, even if an identity not related to race or ethnicity was selected for attribution. Our aim for this study was to evaluate the distribution of hate incidents across different racial and ethnic groups, no matter the perceived cause. In addition, our reasoning includes the primacy of race and the inextricability of race from other social identities, based on theories such as intersectionality (60) and PHCRP (57). However, others have argued that respondents from marginalized racial and ethnic groups may not always perceive their race or ethnicity as a reason for hate incidents, even when they are allowed to select multiple reasons for their mistreatment (62).

The UAS may also be impacted by biases typical to self-administered, large survey panels, such as non-response bias. However, its nationwide, random sampling recruitment process which emphasized inclusion (e.g., providing internet access) likely reduced this. The UAS reports a recruitment rate of 13–15%, a rate similar to or higher than other similar online panels (47). The UAS has also found that its data quality is similar to traditional national surveys (47). Social desirability bias may still be present, potentially resulting in the under-reporting of hate incidents. However, as noted in the discussion, the recent waves of awareness around hate incidents during the COVID-19 pandemic may have also encouraged more individuals to accurately report their experiences with interpersonal racism.

Finally, we cannot compare our estimates to a pre-COVID-19 pandemic era, as the main outcomes were not collected during the regular UAS. Therefore, we cannot conclude that these results are elevated or different from pre-COVID-19 times, but we can consider the results within the context of the pandemic.

There are a number of strengths of this study as well. This study leverages the UAS, a large, publicly available, national panel dataset. The sample is recruited at random through address-based sampling. In addition, the UAS intentionally recruits underrepresented groups, allowing for analysis of typically smaller groups. As a result, a total of six marginalized racial and ethnic groups were examined, including AI/AN, Multiracial, and NH/PI groups which are often considered as an “Other” racial category or lumped with another group. In particular, NH/PIs are often combined with the Asian racial group, potentially obscuring distinct results. Despite small sample sizes for some groups, statistically significant associations were still found, indicating strong associations. As a whole, a major strength of this study

is the examination of multiple racial and ethnic groups, rather than just one singular racial group. This allows us to understand a broader picture of hate incidents during the COVID-19 pandemic. To our knowledge, it is the only research study examining broad experiences of hate across multiple marginalized racial and ethnic groups in the year following the start of the COVID-19 pandemic in the US.

Future research

There are many opportunities for future research on the topic of hate incidents across racial and ethnic groups. Racial groups can be further disaggregated by ethnicity, as there may be differing experiences across ethnic groups. In addition, studies focusing on hate against AI/AN and NH/PI populations should be prioritized, as study results indicate high odds ratios for these two groups. Larger sample sizes could allow further analysis of these groups.

Other avenues of research include exploration of hate incidents as modified by intersecting identities. For instance, gender, immigration status, and age all may interact with race and ethnicity in unique ways because of the ways systems of oppression (i.e., sexism, xenophobia, and agism) interlock with and reinforce racism. Reports from Stop AAPI Hate indicate that hate incidents are 2.3 times more likely to be reported by women, and non-binary individuals are more likely to report various hate incidents such as shunning, being coughed or spat on, and receiving online harassment (3). As such, discrimination against women of color, as well as transgender and gender diverse people of color, are important areas of focus.

Future research should also examine the structural determinants of interpersonal hate incidents. In addition to examining the historical and social contexts of race and ethnicity-based hate and discrimination in greater detail, there are various structures and systems which contribute to interpersonal hate and violence. These structural factors may be considered forms of violence themselves (23), as well as contributing to acute forms of interpersonal violence. For instance, socioeconomic inequities and employment policies may contribute to marginalized racial and ethnic groups working in frontline jobs during the pandemic, exposing them not only to discrimination and violence but also to COVID-19 itself.

Finally, research should also examine potential protective factors against the ill effects of hate incidents, such as resilience, mutual aid, activism, and community care. Although people of color are systematically marginalized, there is also strength and power to be found within and across communities. This power can be galvanized to prevent and address hate incidents and racism.

Conclusion

This study assessed the prevalence of hate incidents and the odds of experiencing a hate incident across all marginalized racial and ethnic groups during the COVID-19 pandemic. As demonstrated in this study, hate incidents have impacted all marginalized racial and ethnic groups in the first year of the COVID-19 pandemic. All marginalized racial or ethnic groups had statistically significant higher odds of experiencing at least two categories of hate incidents compared to white individuals: receiving poorer service and others acting as if they were afraid of them. Asian, AI/AN, Black, and Multiracial groups had significantly higher odds of experiencing each category of hate incident. While marginalized racial and ethnic groups all experienced hate incidents, the racialization and historical context leading to these incidents differs greatly.

These hate incidents have resounding effects, not only on the individuals targeted, but also on their communities and beyond. As the COVID-19 pandemic continues, hate incidents continue as well. In 2022, numerous acts of violence driven by racism have harmed communities of color across the country. These events, alongside our study's results, indicate a continued pattern of increased violence against marginalized racial and ethnic groups that must be addressed by public health professionals. It is of the utmost imperative that the public health community understands the nuanced social and historical roots of these hate incidents. The public health field can take action to disrupt hate incidents through continued research, monitoring, treatment, and prevention of hate incidents and their negative impacts on health.

Data availability statement

The project described in this paper relies on data from survey(s) administered by the Understanding America Study, which is maintained by the Center for Economic and Social Research (CESR) at the University of Southern California. Publicly available datasets were analyzed and can be found here: <https://uasdata.usc.edu/index.php>.

Author contributions

CF and BB collaborated on the conception and design of the study. CF extracted the data, conducted statistical analysis, and wrote the first draft of the manuscript. KH-H contributed to the introduction and conclusion. KH-H, WB, and BB provided feedback on the statistical analysis. CF, KH-H, WB, and BB contributed to the interpretation of analytical results, as well as multiple iterations of critical revision, and editing of the manuscript as a whole. All authors provide approval of publication

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Khmer Girls in Action and healing justice: Expanding understandings of anti-Asian racism and public health solutions

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This community case study highlights how Khmer Girls in Action (KGA), a Southeast Asian young women-led organizing group in Long Beach, California, enacts healing justice. Healing justice is a framework for both transforming structures at the crux of health inequities and healing emotional, spiritual, and psychological wounds inflicted by structural violence. KGA also anchors the cross-racial and intersectional Invest in Youth (IY-LB) coalition. IY-LB youth leaders have successfully fought to increase the city's investments in the social determinants of health, especially young people's well-being. Meanwhile, the coalition has critiqued over-investments in criminalization and policing as devastating Black, Brown, queer, low-income, immigrant, and refugee youth and communities. This case study highlights how KGA's work expands understandings of both anti-Asian racism and public health solutions in the following ways: First, KGA cultivates youth leaders' critical analyses to define root causes of health inequities impacting Southeast Asian refugees as rooted in imperialism, disinvestment, and increased criminalization. Furthermore, youth leaders come to understand how their communities' struggles and liberation necessitate intersectional and cross-racial coalitions. Second, youth leaders forge public health solutions that involve divesting from criminalization and institutionalizing an Office of Youth Development, as co-created with young people. Third, KGA and other IY-LB organizations cultivate youth's leadership skills and community's political power to move hearts and minds of decision-makers and community members. For example, youth leaders have passed a ballot measure funding youth, climate, and health programs in addition to the city-based Office of Youth Development. Fourth, KGA engages in a wide range of "inward" healing practices to salve wounds caused by intergenerational trauma. This case study contributes to Asian American health equity by highlighting the specific importance of organizing, while illuminating abolitionist perspectives on public health solutions- both of which are under-discussed in discourse about anti-Asian racism. KGA's work thus illustrates the importance of centering critical analyses and leadership of

communities most impacted by structural violence in forging transformative public health solutions to anti-Asian racism.

KEYWORDS

youth organizing, community organizing, Southeast Asian American, Khmer and Cambodian Americans, young women, health equity, anti-Asian racism, healing justice

Introduction

Asian American communities face health inequities rooted in structural violence, but obscured by the enduring model minority myth (1). As Saw and colleagues have argued, Asian American health equity requires addressing specific and heterogeneous forms of structural violence, such as “displacement, colonization, and imperialism.”¹ Thus, health interventions must take place on multiple levels: from structural policy changes such as disaggregated data, to community and individual-level interventions, such as community-based, culturally appropriate healing.

Youth and community organizing groups are uniquely poised to address these multiple levels of health inequities: they build the leadership of those most impacted by structural violence to critically analyze, devise solutions, advocate for, and enact systemic change. Such groups have won more equitable policies around the social determinants of health, even when their efforts are not explicitly framed around health (3). Yet organizing is under-examined in public health—especially when discussing Asian Americans, who have been racialized and pitted against other communities of color as politically apathetic (4).

Uplifting Southeast Asian American (SEAA) youth organizing expands understandings of both anti-Asian racism and public health solutions. Youth organizing groups develop critical analyses of root causes of systemic inequities to create and fight for transformative solutions (5). Uplifting analyses of SEAA communities who have experienced and resisted heightened criminalization is essential, since Asian Americans are starkly polarized in how they experience and define anti-Asian racism, as well as perceive increased policing as a policy response (6). Furthermore, youth organizing can promote health on multiple levels: youth lead campaigns shaping more equitable institutions, and participants are empowered in ways that buffer negative health consequences of discrimination (7). Considering systemic barriers to civic engagement for Asian Americans (8) and increasing discrimination negatively impacting health Asian American

youth (9, 10), youth organizing can promote health equity in multiple ways.

This community case study makes these connections by highlighting the healing justice work (2018–2021) of Khmer Girls in Action (KGA), a SEAA young women-led organization. KGA also anchors the cross-racial, intersectional Invest in Youth-Long Beach coalition (IIY-LB). Healing justice² involves both “outward” and “inward” healing: the former focuses on transforming institutions at the crux of health inequities, while the latter involves psychological, spiritual, and emotional “healing from the wounds inflicted from structural oppression” (11). KGA develops youth leaders’ understandings of, and solutions to, structural forces threatening well-being. Youth leaders build civic and political power to win resources for health equity, such as an Office of Youth Development. Finally, KGA specifically attends to emotional well-being and intergenerational healing *via* diverse practices of self and collective care. This case study encourages public health practitioners to more explicitly center and support SEAA young women and those most impacted by structural violence in creating public health solutions.

Contexts: Long Beach and Khmer Girls in Action (KGA)

Long Beach, California is comprised of 72% communities of color (12); approximately 4.8% are Filipino, and 4% are Cambodians (13). Importantly, Long Beach is home to the largest population of Cambodians outside of Cambodia (14). KGA was founded in 1997 to focus on Cambodian young women’s reproductive health and empowerment. Since then, the organization has expanded its scope as a community organizing group working toward “a safe, healthy and just world where all people are free from oppression and are able to determine their lives and communities” (15). KGA also centers an intersectional analysis around gender, class, race, sexuality, and culture.

KGA works to heal intergenerational and compounded trauma. Youth leaders come from families and communities that

1 Similarly, Hansen and Metzl argue for the need for structural and institutional-level interventions that create “health-promoting” environments, neighborhoods, and policies (2).

2 As discussed by scholars and organizers such as Shawn Ginwright and Cara Page.

fled horrific genocide and mass U.S. bombings, only to resettle in disinvested areas lacking supports for healthy integration (9, 16–21). In addition to policies engineering high poverty levels and barriers to basic needs (14, 22, 23), increasingly punitive policies have converged to increase criminalization and surveillance of SEAA, along with Black and other Brown communities (16, 24–27). Subsequently, deportations have disproportionately devastated Cambodians and other SEAA groups³; oftentimes, women bear the brunt of ensuing financial consequences, emotional burdens, and compounded trauma (29).

KGA engages in healing justice to promote healing on individual, community, and structural levels. Their research⁴ found that Cambodian youth in Long Beach experience high levels of depression and lack educational support and reproductive health services, while battling racial profiling and deportations (9, 17). This research, along with lived experience and analyses of how structural violence fuels PTSD, intergenerational trauma, and myriad physical and mental health issues in their communities (9, 22, 30, 31), inspired youth leaders to successfully fight for a Wellness Center providing health education, preventive care, and support services (32).

KGA also works toward a more “progressive and sustainable Long Beach” *via* cross-racial coalitions addressing interlinked contexts of structural racism. Long Beach has a large “racial generation gap” wherein 86% of young people are people of color compared to 47% of seniors (12). This results in an older, whiter tax base that is reluctant to invest in public resources, such as education, that benefits youth of color (33). Yet youth of color also disproportionately experience poverty (34). KGA and other youth organizations have worked together to address these contexts within an infrastructure of coalitional organizing largely funded by The California Endowment’s Building Healthy Communities Initiative. Prior to IY-LB, youth groups worked together to address racially discriminatory punitive school discipline and push for resources for a more supportive school climate (35).

Key programmatic details: KGA and the invest in youth campaign

KGA’s program areas involve leadership development (building analysis and skills for youth to enact change); cultural and media arts; and individualized support for personal well-being and academic and career success. As first years and sophomores in high school, participants join programs separated by gender. They analyze histories and root causes of structural violence that impact their lives and begin developing

leadership skills. As juniors and seniors, youth continue in co-ed leadership programs where they plan events and lead campaigns. For example, I volunteered for the “Khmer Justice Program,” where youth leaders strategize and lead campaign work, mentor younger youth, and serve as ambassadors to different coalitions.⁵

KGA anchors the Invest in Youth coalition, involving 8 other organizations.⁶ IY-LB found that the city allocated only \$204 per youth on positive youth development compared to \$10,500 per youth arrest in Fiscal Year 2018 (34). The coalition has critiqued the city’s over-investment in policing and incarceration and fought for more investments in positive youth development.⁷ From 2017–2018, youth leaders collected 757 surveys finding city residents prioritize mental health, youth employment, and parks and after school programs, rather than police (36).⁸ Youth leaders met regularly with city councilmembers, had their research filed as official city research, testified at city council, and planned public events. In 2018, they successfully convinced City Council to allocate funds for a youth-led strategic planning process to identify priorities for a future youth fund and office. The campaign also fought to ensure that this fund would be housed in the health department, which would have the infrastructure necessary to distribute funds.

From 2019–2020, KGA consulted on the process. IY-LB youth leaders successfully ensured that low-income, queer, youth of color, and youth with disabilities from all city council districts would be substantively represented as youth ambassadors (YAs) developing the Youth and Emerging Adults

5 As with other youth organizing groups, staff center youth decision-making and voice as much as possible in all aspects- for example, in deciding tactics for campaigns, campaign directions, theme of events, artistic vision for events, the content of events, and more.

6 Organizations serve and/or are led by low-income Black, Latinx, queer, and/or gender non-conforming youth. Other organizations include: Californians for Justice; Gender and Sexualities Alliance Network; California Conference for Equality and Justice; Educated Men with Meaningful Messages; Success in Challenges/Children’s Defense Fund-California, Filipino Migrant Center, and Advancement Project. Other foci include: Black & Latinx children; youth of color statewide; Southeast Asian men; Filipino communities; and youth, educator, and allies. The organizations also use different approaches- some focus on organizing, others on direct services and advocacy.

7 As defined within the strategic plan: “engagement of youth along with their families, communities, and/or governments so that youth are empowered to reach their full potential. PYD approaches builds skills, assets, and competencies; foster healthy relationships; strengthen the environment; and transform systems” (35).

8 Action research led by youth in collaboration with Cal State Long Beach. Cal State Long Beach professors and grad students from the Department of Geography led the development of research questions and IRB approval. Youth, with the support of KGA staff, took the lead on collecting surveys through events discussed above.

3 Southeast Asian Americans are more likely to be deported based on old criminal convictions compared with others; and between 2018–2020, the deportation of Cambodian nationals increased by 279 percent (28).

4 In collaboration with researchers from UCLA’s Social Work School.

Strategic Plan. YAs led data collection and analysis,⁹ and IY-LB youth successfully advocated for prioritizing health and well-being in the plan. Meanwhile, leaders continued meeting with elected officials and conducting public events. KGA's Integrated Voter Engagement (IVE) program educated and mobilized voters- especially Khmer/Southeast Asian communities, youth, and low-income communities of color who experience systemic barriers to voting. The IVE program helped the coalition secure 57% of the vote for Measure US: a 15-cent tax on local oil companies funding programs for climate resilience, a Long Beach Youth Fund, and health programs. Along with other organizing efforts, IY-LB secured City Council's approval of the strategic plan and allocation of Measure US funds toward establishing an Office of Youth Development.

Methodology

This case study draws from a subset of my larger, community-engaged ethnographic project.¹⁰ This specific study analyzes 200 h of participant observation and 11 interviews¹¹ that I conducted with KGA staff and youth leaders from 2018–2019 and 2021, as well as my content analysis of 75 sources including city planning documents, reports, op-eds, local newspaper and independent media articles, and social media posts. Minors under 18 signed assent forms and parents signed consent forms; adults signed consent forms. Quotations from public documents (e.g., op-eds) are attributed to real names, whereas quotes from interviewees are labeled with pseudonym initials to protect privacy. Participant observation included weekly Khmer Justice Program and Summer Organizing Institute meetings, IY-LB meetings led by KGA youth and staff, youth-planned events, voter canvassing, and city council meetings. Semi-structured interviews addressed questions such as: impacts and lessons of KGA participation; leadership skills developed; healing justice practices; self and collective care, and reflections on campaigns. Using both inductive and deductive coding, I coded secondary sources, field notes, and/or event and interview transcriptions *via* NVivo. Codes relevant to this particular study include: healing justice, self-care, collective care, support systems, definitions of racism, and well-being. For this study, I further refined sub-themes such as “anti-Asian racism,” “coalition-building,” “health framing,” and “political education.”

9 This included: strategic planning trainings; facilitated community forums (including responding to 2020 uprisings for Black liberation); designed and conducted interviews; co-designed survey instruments; collected survey data from 787 youth; and analyzed findings.

10 Initially approved by University of Southern California's IRB, with follow-up research approved by Cal State Long Beach's IRB.

11 Interviews more generally came from snowball sampling. This includes 6 interviews with KGA staff and 6 with youth leaders.

Results: How KGA redefines anti-Asian racism and promotes health equity

Political education: Identifying root causes of anti-Asian violence and health inequities

KGA facilitates political education where youth leaders identify root causes of intergenerational trauma and structural violence as experienced and resisted by SEAA refugee communities and as connected to other communities of color. These inform nuanced understandings of anti-Asian racism.

For example, I sat in on a workshop where the organizer led youth leaders through a timeline of the “U.S. Migration-to-School-to-Deportation pipeline.” They pointed out that the timeline began decades prior to the Khmer Rouge, illustrating lineages of imperialism leading up to U.S.’ dropping millions of tons of bombs in Cambodia, Vietnam, and Laos. Yet resettlement did not bring full relief: Jenn explains how contexts failed to support refugees and discusses how and why many young people's parents are pushed to low-wage labor that compounds grave tolls on their health. They then discuss policies such as welfare reform, the three strikes law, and Illegal Immigration Reform & Immigrant Responsibility Act, which have fueled criminalization and deportations of more than 750 Cambodian, 200 Laotian, and 550 Vietnamese community members as of 2018 (37). Youth leaders discuss the impacts of heartbreaking family separations and how women bear the burden of knitting together fragmented families. After all, 1/3 of respondents in KGA's 2011 study reported that someone they knew has faced deportation (17). To conclude, Jenn encourages members to reflect on how they stand on the shoulders of ancestors and their visions for collective thriving.

KGA staff and youth leaders identify these forms of structural violence as anti-Asian racism. As KGA leader Alexis wrote in the *Long Beach Post*, many Cambodian refugees facing deportation “didn't have the resources to cope with intergenerational trauma or to help their parents with translation or employment” (38). In public comment urging the City Council to support funding for positive youth development, youth leader Khyloe explained that: “When my parents came as refugees, they didn't know English or how to get food. They struggled to find work or even get income. They worked in low paying industries like garment factories and donut shops. Many in their generation had a hard time making ends meet, so they turned to robberies and selling drugs and joining gangs.” Youth leaders publicly shared stories linking the personal and political, explaining how structural violence manifests in mind, body, and soul, from

grappling with heart disease and diabetes, to cycles of heartbreak and displacement.

These analyses of anti-Asian violence expand mainstream discourses of anti-Asian hate focused on specific incidents usually targeting East Asians. KGA released a statement expressing outrage and grief after the 2021 murders of Asian women in Atlanta. They connected gendered and racialized anti-Asian violence to Biden's deportation of thirty-three Vietnamese community members- even as Biden condemned anti-Asian hate. KGA pointed out that these events are part of a "a pattern of white supremacy to uphold dehumanizing systems of oppression." Their statement urged intersectional and coalitional efforts that address insidious and everyday forms of structural violence manifesting in their community's struggles around "school, housing, employment, family separations" (39).

This statement also speaks to KGA's definitions of anti-Asian racism as intertwined with histories and futures of Black, Latinx, and Indigenous communities. Their perspective points to policing and incarceration as a form of anti-Asian racism. KGA youth leaders' previous research found that 39% of young Cambodian men surveyed had been stopped by law enforcement (17). This lived experience contrasts with that of some East Asian American groups perceiving police positively and as an appropriate solution to anti-Asian racism (6). In contrast, organizing director and KGA alum Jenn explained in a podcast interview:

"As children of refugees, we came into a system that has a history of harming Black communities and incarcerated Black and Brown youth at higher rate. And when the 1.5 refugee generation came and resettled here, they got pulled into that. We were vulnerable; we were criminalized for being poor, and our families have not even settled here for even 45 years. But what we've learned is that this all points to a bigger collective problem, and it's a call for a collective solution to address root causes" (40).

Jenn's argument is illustrative of KGA's coalitional, racial justice work. KGA leaders stated in interviews that participating in IYY-LB and previous coalitions fostered their deep personal and political connections with other communities of color. Some leaders had participated in a retreat in San Diego where they learned about and connected their own experiences to the dehumanization of Mexican migrants by a massive Border Patrol presence. Furthermore, KGA holds events such as the Feast of Resistance to help members dismantle myths about Thanksgiving and to understand settler colonialism and Native survivance. Thus, KGA's analysis of anti-Asian racism is thoroughly situated within political education highlighting connections with other communities of color.

Defining expansive public health solutions within investment in positive youth development and resources

These nuanced analyses feed into development of transformative solutions for outward healing. Youth leaders leveraged action research and storytelling in public testimonies, op-eds, and events. They argued that over-investments in criminalization harmed their well-being and advocated for more city-level investments supporting their communities' holistic health. These explicit critiques of incarceration resonate with the American Public Health Association's assertion that abolition of police and prisons is a critical strategy for health equity (41). As KGA's executive director Lian pointed out during a press conference, the city budget is a sign that "Long Beach has historically underinvested in the health and well-being of young people." KGA youth leader Angelina reflected that workshops where youth leaders analyzed the city budget showed how institutions would "rather punish us than give us the opportunities to heal or improve ourselves." Such supports, as youth leaders argued in public statements, could include programs such mental health, youth leadership, and job development.

Convergences of the COVID-19 pandemic, Summer 2020 uprisings around Black lives, and backlashes to the uprising further highlighted the need for explicit analyses around abolition as public health. Indeed, the issue came to a head during the strategic planning process. City staff attempted to create a priority around "public safety" and proposed partnerships with Long Beach Police. Youth leaders were taken aback, pointing out that youth participants had never stated this as their priority. Rather, they pointed out that their well-being was harmed by police. As Jenn summarized: youth of color "are in heavily policed neighborhoods, which also leads to more fear, paranoia, mistrust, depression, and this feeling of surveillance" (40).

Instead, youth leaders asserted that the appropriate solutions necessitated investing in public health, meeting basic needs, and centering racial, gender, and socioeconomic equity. They successfully ensured that the plan's language foregrounded priorities around youth's well-being. Youth leaders' research and analyses fed into key priorities that included: physical health, mental health, and emotional wellness; planning for the future; community care, housing, and transportation. For example, the plan states a commitment to "holistic approaches to well-being, whereby youth are mentally, physically and spiritually healthy and live in safe, economically sound environments that support their overall well-being" (35). Such framing reflects IYY-LB youth leaders' recognition of investment in health, well-being, and social determinants of health as a key solution- not just to anti-Asian racism, but to structural violence impacting Long Beach's youth.

Developing Southeast Asian youth's civic and political power—Transforming institutions that cause harm

KGA cultivates leadership skills of young people to enact “outwardly oriented” healing justice to create more equitable institutions. Youth leaders move the hearts and minds of decision-makers, peers, family, and community members through arenas such as electoral organizing. Politicians are more responsive to “likely voters,” (currently more white, affluent, facing less health conditions) who also tend to reject more equitable policies such as Medicaid expansion (42). Yet SEAA and other communities of color have historically been disenfranchised and face specific barriers to civic and political engagement. In an IY-LB meeting, KGA leader Chelsea reflected: “my parents are refugees from the Khmer Rouge and so they have a lot of trauma around voting and being involved in politics, so they don't really want to get involved.” In 2016, only 37% of Southeast Asians registered voters in Long Beach turned out to vote (43). Turning SEAA and other disenfranchised communities into “likely voters” is an under-examined health equity strategy.

KGA's workshops empower youth to understand and educate others about the importance of electoral engagement as one of many strategies for transformative change. As Joy Yanga, KGA's communications director stated in the *Press-Telegram*, SEAA youth and youth of color can help family members and peers understand the “benefits that come with voting and having political power in the community” (44). Youth leader Alexis explained in an interview that KGA's workshops dissected various ballot initiatives and rationale for voting in different ways.

Youth also canvass, phone bank, and lobby legislators around statewide propositions and local campaigns such as Measure US (previously discussed in Programmatic Details). Especially critical is the support that young people receive from each other and adult staff. Before canvassing, organizers help young people develop their personal stories as connected to the ballot initiative. Leaders practice the script multiple times with each other and staff to become comfortable with and tailor the script and practice public speaking. Youth leaders give each other feedback and discuss ways to improve the script. Younger members are paired with older members and are always accompanied by an adult, so they are fully supported while talking with residents.

Consequently, KGA youth have influenced family, peers, and community members and fueled concrete wins for health equity. Alexis shared that her parents “will come to me about what prop[ositions] to vote for,” and that voting has become a family matter. KGA's electoral organizing fits into a longer-term strategy of building relationships with community members.

Youth leaders canvass in their own neighborhoods and leverage their existing relationships. The IVE program contacts residents regularly and connects them to vital services; thus, residents grow to understand and enthusiastically support KGA's work. As such, KGA was able to win voters' support of Measure US; they also convinced over 700 residents to voice their support for using Measure US for the Office of Youth Development and other health programs.

KGA youth leaders also plan, perform in, and emcee creative public events to engage the broader public and conduct delegation meetings to win over key decision-makers. Events include a wellness week featuring various health and wellness activities and an annual “Haunted House” around Halloween highlighting different campaigns. Jenn argued that this format helps to “personify the horrors” of structural violence that their campaigns address and “highlight the mental health aspect of... the true impact of these ballot measures” (44). Youth members participate in different planning committees led by staff members, such as art, logistics, and media outreach, to implement an artistic vision in these events.

Staff also support youth to link their personal stories to the issues they advocate for and to tell their stories in compelling ways. Youth leader Emily reflected in an interview on preparing to emcee an event:

[KGA staff] sat down with me and [the other emcee] to create our scripts. He told us, “Be yourself, you don't have to be so professional, be more expressive.” He gave us some tips on how to really project our voices and have fun with it. We edited [the script] to make it sound like our own. I feel [supported] with my co-emcee and [staff] saying, “you got this girl, you have the script if anything goes wrong; you can do this.”

Emily's story reflected youth leaders' interviews where they shared that they always had ample time where staff encouraged them to practices and personalize their scripts. As Angelina stated, “it's very empowering because we don't see a lot of youth speaking out and [being] given a space to practice.” These efforts thus illustrate how KGA's organizing equips young people to lead outwards aspects of healing justice, which also provides individual benefits for well-being.

Self and collective care and inwardly oriented healing practices

Much of KGA's “outward” healing is interlinked to inward healing. For example, Alexis shared that KGA provided legal and community support to prevent her uncle's deportation; previous research shows that deportations takes grave tolls on deportees' and their families' health (45), while family reunification is linked to positive health outcomes (46). However, organizing

for systemic change can be exhausting, potentially even compounding trauma and negative health consequences (47). KGA staff shared in interviews that taking time to heal is especially critical given contexts of intergenerational trauma and ongoing systemic violence. Youth leader Chelsea reflected, “We deserve love and happiness just as much as [social and] economic policies we [are] fighting for with KGA”: signaling the importance of attending to individual well-being.

As such, KGA engages in a diverse range of self and collective care practices, including arts, culture, and other practices that involve the senses and, as Lian described, “interrupt our cellular memory of trauma.” For example, youth members often create visual art, and their annual arts showcase, Yellow Lounge, involves youth learning, creating, and performing classical Khmer dance, poetry, Theater of the Oppressed, hip-hop dance, and more. Recuperating these cultural practices is a critical form of healing that resist multiple layers of systemic erasure and invisibilization.

Furthermore, as Lian shared in an interview, KGA intentionally builds in time for play and rest: whether incorporating fun icebreakers, breathing, meditation, and tai chi practices into retreats and weekly meetings, or dedicating a day each month to wellness activities. Wellness days have included movie-watching, workshops herbal teas or remedies, or trips to the aquarium or beach. As Chelsea reflected:

“When we have a relaxation day where all we do is watch a movie, talk about our feelings and sit in a circle—that’s enough self-care for me to get through whatever BS I’m going through in high school. That sanctuary space is needed... because I don’t know what I would’ve done [otherwise].”

In interviews, KGA leaders shared that they feel holistically supported. KGA provides food and transportation, as well as supportive relationships essential to their well-being. Staff and youth have regular check-ins, which Alexis shared:

“Really helped me talk about my problems. It was really good for me to talk to someone about it because... I would keep it quiet [before]. But [KGA staff] were very dedicated in having a sit-down talk with me when I needed it... Joining KGA made me realize that mental health is very important, physical health is very important. The stuff that I go through at home is not something that I’m going through by myself. I don’t have to keep it to myself. I can reach out for help.”

She also shared that members develop a “buddy system” to regularly check in on and support each other. Many youth leaders also shared in interviews that KGA’s academic and career support program—especially the college application support—alleviated academic stress. For example, Emily reflected that KGA’s belief in her leadership and academic support helped her

continue in the program while juggling school, extracurricular, and caregiving responsibilities.

KGA also provides a unique space for young people to process intergenerational trauma and specific, intersectional experiences of being SEAA young women, including intersections with queer and non-binary identities. As Emily shared, KGA helped her “embrace my sexuality,” and connected her to queer youth of color spaces while encouraging her to lead workshops on queer identity. Meanwhile, Chelsea explained that these shared experiences helped her “find comfort in staff and [members] who were really supportive and often going through the same thing.” Many young people shared that KGA helped them heal relationships with their parents. As Alexis stated:

“They really help us learn to communicate how we feel with our parents. I feel a lot closer to my mom because of KGA...I did tell her about the work that we’re doing, and she was really inspired by it... She will come to some of [our] events.”

KGA helped young people understand what their parents had endured and survived, while encouraging youth to pursue their own interests and passions. Chelsea reflected on how KGA mentors helped her “to find my voice in art,” which helped her feel less pressure about school because “I just feel comfortable in what I’m doing in my life.” KGA staff supported her to navigate college and financial aid applications and mediated a conversation with her parents to win their support for pursuing her dream school and major.

Finally, engaging in leadership and organizing activities boosts psychological empowerment, pride in identity, and other positive impacts on health (7). Young people see the real outcomes of their organizing, which supports their hopefulness and sense of empowerment. Chelsea explained that “KGA created a space for me to come into power, I didn’t realize how much youth have been involved in local policies, and there are ways for us to have our voice heard.” Similarly, Alexis reflected that participating in this campaign “showed what a difference I can make,” and nurtured her optimism that they would win “more in the future.” As such, the inward and outward aspects of healing justice can also reinforce each other.

Conclusion and summary

Khmer Girls in Action illuminates how healing justice—that is, engaging in inwardly oriented healing while building the leadership and power of SEAA young women, in coalition with other youth and communities of color—has advanced health equity. Centering perspectives of SEAA young women expanded definitions of, and solutions to, anti-Asian racism. Their critical understandings of policing, incarceration,

criminalization, and deportations targeting Cambodian and other SEAA communities illustrate connections to other communities of color. However, KGA and other organizing groups grapple with the need for more sustained, general funding to engage in long-term work needed for healing structural violence. The following recommendations suggest how public health practitioners can more actively center and support these efforts.

Ensure substantive inclusion of SEAA communities and organizing groups in public health- community partnerships

Previous scholarship has rightfully pointed to the importance of public health partnerships with Asian American community organizations, such as service providers and community-based healing (1, 48). KGA's work points to how organizing is distinct in grappling with power and supporting those most impacted by health inequity to shift institutions. Furthermore, structural violence faced by SEAA communities fosters distinct perspectives less frequently foregrounded in Asian American discourse. Public health practitioners should create explicit guidelines to require inclusion of SEAA and other Asian American groups (e.g., South Asians) and organizing groups in public health-community partnerships.

Cultivate long-term listening around campaigns for health equity

KGA youth leaders developed their own analyses and solutions for health equity and successfully pushed the local health department and city to implement their vision. Elsewhere, public health departments could promote understandings of community-based health solutions by developing long-term relationships to listen to how organizing groups define and advocate for health solutions, rather than first creating programs and recruiting community partnerships after the fact.

Support co-governance, not just consultation with youth organizing groups

Public health and community partnerships must go beyond consultation. KGA pushed city staff to substantively include and listen to youth voice in multiple arenas. As of 2022, youth leaders are co-creating the Office of Youth Development with the city. Public health practitioners can fund youth organizing groups

to provide trainings and best practices to support substantive co-development of health equity solutions.

Critically analyze power and politics involved in devising public health solutions

KGA's work has explicitly grappled with power. Implementing police and prison abolition as a public health strategy will further require confronting power. Public health departments can learn from youth and community organizing group's analyses of power to devise more expansive solutions. For example, public health departments can fund community organizations to lead power analyses to truly understand and address root causes of health inequities.

Leverage public health framing and funding to support organizing work

KGA and IYY-LB leveraged public health frames to advance a positive vision of youth well-being and mobilize support. Public health departments, practitioners, and scholars can more concretely support these efforts by diverting funds to organizing groups' efforts. They could also provide data and support organizing groups' efforts to link their efforts to health equity frames (49). They could help such organizations garner more support from health-oriented foundations.

KGA's healing justice work encompasses multiple complexities- from the specificity of Southeast Asian young women's perspectives as connected to broader systems of structural violence, to contradictions and confluences between transforming systems and attending to deeply, personally felt pain. KGA enacts collective care on multiple levels to dismantle anti-Asian racism and advance public health. Centering the brilliance, leadership, creativity, full humanity, and expansive vision of those most impacted by structural violence is necessary for all of us to thrive.

Acknowledgment of constraints

This case study is deeply rooted in lessons from Cambodian American and Southeast Asian American youth-led organizations with the specific context of Long Beach from 2018–2021. As such, replication in other contexts may vary greatly due to infrastructures of community/health organizing; funding or lack thereof; and politicians' will. Furthermore, this case study comes from perspectives focusing

on KGA youth and staff, and the author's perspectives as a volunteer and supporter of KGA. Further study should involve perspectives from city officials, staff, and those who are not directly involved in KGA or its coalitional efforts. Asian Americans are a heterogeneous community and far from united on policing and incarceration as solutions or root causes of anti-Asian racism and health inequities. Nevertheless, this campaign highlights how Asian American public health practitioners should grapple with the politics and power involved in public health rather than assuming homogeneous political stances.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

Ethics statement

The studies involving human participants were reviewed and approved by University of Southern California; California State University, Long Beach. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

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Author contributions

The author confirms being the sole writer of this work, with edits and support provided by KGA staff and youth, and has approved it for publication.

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Conflict of interest

As of June 2022, author ML is currently a board member of Khmer Girls in Action.

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Invisibility as a structural determinant: Mortality outcomes of Asians and Pacific Islanders experiencing homelessness

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Introduction: Asians and Pacific Islanders (APIs) who are experiencing homelessness are situated in a social intersection that has rendered them unrecognized and therefore vulnerable. There has been increasing attention to racial disparities in homelessness, but research into API homelessness is exceedingly rare, despite rapidly growing populations. The purpose of this study is to examine the causes of death among APIs who died while homeless in Santa Clara County (SCC) and compare these causes to other racial groups.

Materials and methods: We report on data obtained from the SCC Medical Examiner-Coroner's Office on unhoused people's deaths that occurred between 2011 and 2021 ($n = 1,394$), including data on deaths of APIs experiencing homelessness ($n = 87$).

Results: APIs comprised 6.2% of total deaths of unhoused people. APIs died less often of causes related to drug/alcohol use than all other racial groups (24.1, compared to 39.3%), and there was a trend toward more API deaths from injuries or illnesses. When APIs were disaggregated into sub-groups (East/Southeast Asian, South Asian, Pacific Islander), there were notable mortality differences in cause of death, age, and sex.

Discussion: We argue that invisibility is a structural determinant of health that homeless APIs face. Though relatively small in numbers, APIs who are invisible may experience increased social isolation and, subsequently, specific increased mortality risks. To understand the health outcomes of unhoused APIs, it is essential that researchers and policymakers recognize API homelessness and gather and report disaggregated races and ethnicities.

KEYWORDS

homeless, cause of death, mortality, Asian, API, structural determinants, exclusion, isolation

Introduction

Asians and Pacific Islanders (APIs) experiencing homelessness are situated in a social intersection that has rendered them invisible and unacknowledged in public discourse and social policies. In recent years, major public health organizations (1, 2) have declared that homelessness (i.e., being homeless, unhoused, houseless) is a public health crisis that is known to have profound, lasting health impacts on the individual and community (3). There is growing attention to racial health disparities in unhoused populations, but research and reporting into API homelessness remains exceedingly rare.

The sparse attention to unhoused APIs is due in part to the relatively small numbers. According to the 2019 Annual Homeless Assessment Report to Congress, APIs comprise just 2.9% of the national unhoused population (Asian 1.3% and Pacific Islander 1.6%), compared to 47.7% White, 39.8% Black, 22% Latino, 6.5% Multiple Races, and 3.2% Native American (4). Such statistics give the impression that homelessness is not a serious concern for APIs. However, the percentage of unhoused people who are API is higher than national averages in regions with large API populations. According to the 2022 Point-in-Time-Count (PITC), a bi-annual estimate of homeless counts and demographics, APIs make up 12% of the homeless population in San Francisco, and 9% in San Jose (5, 6). These numbers are increasing. Nationally, there has been record growth in APIs experiencing homelessness, with rates of Asian unsheltered homeless (7) and API sheltered homeless groups (8) growing faster in recent years, compared to other racial groups. In San Jose, California, between 2017–2020, the estimated population of unhoused APIs increased 57% (7, 9).

It is noteworthy that estimates of unhoused APIs are likely undercounts. Estimates of unhoused people rely on contacts with service providers, but APIs are less likely to access homeless services. Nationally, unhoused API people are less likely to stay in shelters compared to other racial groups, with the exception of Native Americans (9). One study of homeless veterans found that API veterans were more likely to screen positive for housing instability following discharge than their White counterparts; however, APIs were the racial group least likely to receive housing services (10). Advocates have argued that the PITC is susceptible to undercounting APIs due to systemic barriers like language differences or concern about disclosing immigration and citizenship status. Studies also indicate that unhoused and precariously housed APIs are more likely to stay in “doubled-up” settings (11, 12)—that is, in a home without being a member of the household—which is not captured by the PITC.

There is a serious dearth of public health research on API homelessness, but the existing studies do show that APIs have different patterns of risk factors and vulnerabilities in homelessness than other racial groups. One study found that for Asians, homelessness risk factors included having mood disorders, receiving welfare services, and having physical health conditions (13). Another study of homeless veterans showed that

unhoused APIs were less likely to report having alcohol or drug issues than other racial groups, but they were significantly more likely to report current mental health issues and histories of psychiatric hospitalization (14). In a randomized control trial of Hepatitis A and B vaccine treatment among homeless parolees, being an unhoused API was one of the strongest predictors of non-completion of the vaccine (15).

Mortality data are an epidemiological surveillance tool that can provide insights into the health of unhoused people and the heightened risks they face. In the last 20 years, studies have shown that veterans, older adults, youths aged 15–25, and children under 18 who are unhoused are at greater risk of mortality than their housed counterparts (16–19). The primary causes of death vary by region, and they often include deaths related to substance use, injuries, and illnesses including cancer and heart disease (20–22).

Although most recent academic studies on homeless mortality report and analyze race, many do not include APIs (22–24). In studies that do include APIs, the sample sizes of APIs are too small for analysis (19, 25). To our knowledge, no prior academic study has analyzed unhoused API mortality.

The purpose of this study is to fill this gap by examining and reporting the causes of death among APIs who died while homeless in Santa Clara County (SCC), a region better known as Silicon Valley. SCC has a large population of Asian residents—39% Asian and 0.5% Pacific Islander (26). In examining mortality data, our intention is to characterize unhoused API deaths, which, given the absence of other data, can provide rare insights into the circumstances APIs face when homeless.

Methods

We report on data obtained from the SCC Office of the Medical Examiner-Coroner (OMEC) on the deaths of people experiencing homelessness in SCC between 2011 and 2021 ($n = 1,394$). The OMEC determined a deceased individual was unhoused based on a medicolegal death investigation that included examining the circumstances and environment attending a death, interviewing people who knew the deceased individual, and verifying with next-of-kin. The data included: race/ethnicity, age, sex, location of death, cause of death, manner of death, and other notable conditions.

Cause of death categories

The causes of death were recorded as clinical descriptions on the death certificate, rather than International Statistical Classification of Diseases (ICD) codes. We classified these causes of death into six mutually exclusive categories. We first categorized Homicides, Suicides, and Undetermined cases; these determinations were made by the OMEC. Then we

identified cases involving Substance Use if one or more drugs and/or alcohol were mentioned in the primary cause of death. Finally, we categorized the remaining cases as either Injury or Illness.

Race/ethnicity categories

The race/ethnicity of the deceased individual was included in the OMEC data. Racial and ethnic categories included: Alaskan Native, American Indian, Asian, Black, Hispanic, Native Hawaiian, Pacific Islander, South Asian, Unknown, and White. We combined the OMEC's Asian, South Asian, and Pacific Islander categories to create our API category. We also disaggregated the API category into three sub-groups: East/Southeast Asians, South Asians, and Pacific Islanders.

Statistical analysis

We analyzed descriptive statistics of homeless decedents in SCC from 2011 to 2021, comparing age and cause of death among API decedents to all other racial groups combined. Descriptive statistics included counts, means, percentages, and confidence intervals. All analyses were performed using Stata 15 (College Station, TX) and Microsoft Excel.

Results

In SCC, between 2011 and 2021, there were 87 unhoused API deaths, which made up 6.2% of total deaths of unhoused people in the county (Tables 1, 2). The sex distribution of deaths was consistent between API and non-API racial groups. Men made up 83.9% of API deaths (95% CI: 74.5–90.9%) and 81.6% of non-API deaths (95% CI: 79.4–83.6%).

Cause of death among APIs

The distribution of causes of death differed between APIs and all other racial groups combined (Figure 1). APIs were less likely to die of causes related to substance use (24.1%, 95% CI: 15.6–34.5%) than all other racial groups combined (39.3%, 95% CI: 36.7–42.0%). Unhoused APIs were more likely to die of illness (39.1%, 95% CI: 28.8–50.1%) than other racial groups (30.7%, 95% CI: 28.1–33.3%) and more likely to die from injuries (26.4%, 95% CI: 17.6–37.0%) than other racial groups (18.5%, 95% CI: 16.5–20.8%), although these differences were not statistically significant.

Illness deaths among APIs were most commonly cardiovascular disease (50.0%, 95% CI: 32.4–67.6%) and

TABLE 1 Characteristics of the sample ($n = 1,394$), including APIs ($n = 87$) and sub-groups.

Characteristic	Total ($n = 1,394$)
Race/ethnicity	n (%)
API	87 (6.2%)
East/SE Asian	70 (5.0%)
South Asian	4 (0.3%)
Pacific Islander	13 (0.9%)
Hispanic	438 (31.4%)
Black	132 (9.5%)
White	696 (49.9%)
Native American	14 (1.0%)
Middle Eastern	7 (0.5%)
Other	12 (0.9%)
Unknown	8 (0.6%)
Sex	n (%)
Male	1,139 (81.7%)
Female	243 (17.4%)
Unknown	12 (0.9%)
Age	n (%)
Younger than 18	8 (0.6%)
18–25	36 (2.8%)
26–30	48 (3.4%)
31–40	166 (11.9%)
41–50	290 (20.8%)
51–60	432 (31.0%)
61–70	308 (22%)
71–80	75 (5.4%)
81+	14 (1.0%)
Unknown	17 (1.2%)

infection (11.8%, 95% CI: 3.3–27.5%). The majority of injury deaths were due to blunt force injury (73.9%, 95% CI: 51.6–89.8%). Most deaths attributed to substance use involved acute toxicity from stimulants, such as methamphetamine (61.9%, 95% CI: 38.4–81.9%) and cocaine (14.3%, 95% CI: 3.0–36.3%).

Age of death among APIs

The age of death of unhoused APIs (54.0 years, 95% CI: 51.0–56.9%) was consistent with the overall average age of death for all racial groups (52.5 years, 95% CI: 51.0–56.9%). However, API women (57.9 years, $n = 13$, 95% CI: 46.8–69.1%) showed a wider range in age of death, compared to API men (53.3 years, $n = 72$, 95% CI: 50.3–56.2%). There were two deaths among API women over 85 years of age (85 and 87 years), whereas the oldest death among API men was 77 years.

TABLE 2 Characteristics of the API sub-groups ($n = 87$).

Characteristic	East/SE Asian ($n = 70$)	South Asian ($n = 4$)	Pacific Islander ($n = 13$)	Total ($n = 87$)
Sex	n (%)	n (%)	n (%)	n (%)
Male	60 (85.71%)	3 (75.00%)	10 (76.92%)	73 (83.91%)
Female	9 (12.86%)	1 (25.00%)	3 (23.08%)	13 (14.94%)
Unknown	1 (1.43%)	0 (0.00%)	0 (0.00%)	1 (1.15%)
Age	n (%)	n (%)	n (%)	n (%)
Younger than 18	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
18–25	1 (1.43%)	0 (0.00%)	1 (7.69%)	2 (2.30%)
26–30	0 (0.00%)	0 (0.00%)	3 (23.08%)	3 (3.45%)
31–40	7 (10.00%)	0 (0.00%)	3 (23.08%)	10 (11.49%)
41–50	13 (18.57%)	2 (50.00%)	2 (15.38%)	17 (19.54%)
51–60	20 (28.57%)	1 (25.00%)	3 (23.08%)	24 (27.59%)
61–70	18 (25.71%)	1 (25.00%)	1 (7.69%)	20 (22.99%)
71–80	7 (10.00%)	0 (0.00%)	0 (0.00%)	7 (8.05%)
81+	2 (2.86%)	0 (0.00%)	0 (0.00%)	2 (2.30%)
Unknown	2 (2.86%)	0 (0.00%)	0 (0.00%)	2 (2.30%)

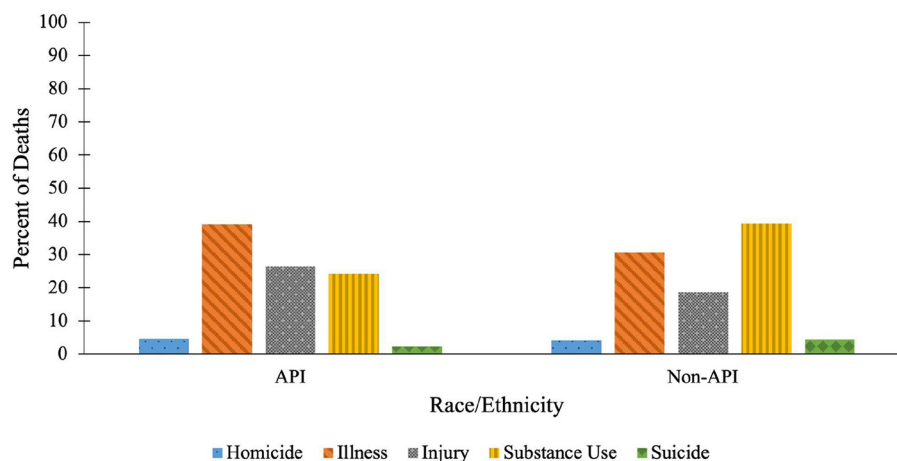


FIGURE 1

Distribution of causes of death among APIs vs. all other racial groups. APIs ($n = 87$) are compared to all non-API racial groups combined ($n = 1,307$).

Cause of death by API sub-groups

Due to small sample sizes, differences in causes of death between API sub-groups are not statistically significant. However, the distribution of causes of death differed between disaggregated API sub-groups of East/Southeast Asian, Pacific Islander, and South Asian decedents. Among East/Southeast Asian unhoused deaths ($n = 70$), 45.7% were due to illness (95% CI: 33.7–58.1%), 28.5% to injury (95% CI: 18.4–40.6%), and 18.6% to substance use (95% CI: 10.3–29.7%). For Pacific Islanders ($n = 13$), 30.7% of deaths were due to substance use

(95% CI: 9.1–61.4%), 23.1% to homicide (95% CI: 5.0–53.8%), 23.1% to injury (95% CI: 5.0–53.8%), and only 15.4% to illness (95% CI: 1.9–45.4%). All South Asian unhoused deaths ($n = 4$) were related to substance use.

Age of death by API sub-groups

Age of death also differed between disaggregated API sub-group categories. The average age of death for East/Southeast Asian unhoused people was 56.8 ($n = 68$, 95% CI: 53.7–59.8%)

years, for South Asian individuals was 51.0 ($n = 4$, 95% CI: 38.2–63.8%), and age of death was notably lower at 40.5 years for Pacific Islanders ($n = 13$, 95% CI: 32.6–48.3%). East/Southeast Asian women had the oldest age at death among APIs, with an average age of 65.7 years old ($n = 9$, 95% CI: 54.1–77.2%), which was over 10 years older than the average age of death for East/Southeast Asian men at 55.4 years ($n = 59$, 95% CI: 52.4–58.4%).

Discussion

To summarize, we found that deaths of unhoused APIs in SCC were attributed to distinct causes compared to other racial groups, with notable gender and age differences. APIs were more likely to die from causes related to illness and injury and less likely to die of causes related to substance use, compared to other racial groups. We also show that when the API category is disaggregated into sub-groupings, there were age, sex, and cause of death differences between unhoused East/Southeast Asian, South Asian, and Pacific Islander people.

There are several limitations to this study. First, the sample size per year of unhoused people's deaths, while tragically high, is small for statistical analysis. We describe unhoused people's deaths in SCC, but this analysis is not necessarily predictive or generalizable to other regions. The OMEC provided the causes of death as clinical descriptions. We interpreted the clinical descriptions to standardize into the cause of death categories used for analysis. The OMEC data did not include separate categories for East Asian and Southeast Asian decedents. This study involved people who died while unhoused, whose cases were reviewed by the OMEC, and does not include cases that were not reviewed through this office. The findings describe mortality trends, but do not determine the scale of death that is directly attributable to being unhoused. Factors such as immigration status, shelter status, and duration of homelessness are key factors that we were unable to include in this analysis.

These limitations notwithstanding, there are several implications for research and policy surrounding API homelessness. First, in recent conversations addressing anti-Asian hate, API advocates (27–29) and health researchers (30) have brought attention to API invisibility—the failure to meaningfully represent API experiences and needs. They argue that invisibility lack of recognition, exclusion, is a form of racism that APIs face, resulting in othering, dehumanization, and violence.

We argue that the failure to represent unhoused APIs in health research, advocacy, media, and policy is an upstream structural determinant that renders them more vulnerable to specific risks (31). In the words of Kimberlie Crenshaw (32), “When you can't see a problem, you can't solve it.” We hypothesize that API invisibility leads to lack of community outreach and social support and consequently, heightened

isolation. Isolation while homeless has been linked to serious health consequences, including increased depression, self harm, and exposure to violence (33, 34). Consistent with this framework, in our study we found that APIs, who are seldom the focus of health and homelessness research or interventions, die of tragic and preventable causes, with high rates of injury-related causes of death (e.g. blunt force injury).

In many regions, APIs face homelessness with little to no targeted outreach and support. Public health programming, interventions, education, and prevention that are tailored to APIs based on data are necessary to prevent the injurious, tragic outcomes we report in this analysis.

The information drawn from mortality research can be used to develop public health interventions and research investigations focused on unhoused APIs. For example, we found that APIs were more likely to die of injury deaths than other racial groups, and that these injuries were most commonly blunt force injuries. This outcome should be investigated further to understand the causes and contexts of these blunt force injury deaths. We also found high rates of substance use deaths among South Asians, early mortality among Pacific Islanders, and substantially older deaths among homeless East/Southeast Asian women. Although the sample sizes were small for these groups, recognizing these patterns can lead to targeted health interventions, such as developing methamphetamine outreach for unhoused South Asians and investigating the pathways to homelessness for Pacific Islanders and older East/Southeast Asian women.

For decades, API researchers have advocated for the disaggregation of API data by ethnicity or at least by API sub-groups (e.g. East Asians, South Asian, Southeast Asian, Pacific Islander) (35, 36). Our findings, which suggest differences between API sub-groups, are further evidence of the need for disaggregation. Key differences in mortality—for example, that unhoused Pacific Islanders died over 15 years younger than East Asians—are blurred and effectively erased without disaggregated data. These findings are consistent with a large body of health research showing major health differences and disparities between API ethnicities (37, 38). We add to the chorus of researchers urging for the use of survey instruments with disaggregated API categories and the reporting on disaggregated API data categories when possible.

Finally, beyond the implications for unhoused APIs, this analysis underscores the need to improve the ways health researchers recognize minority and underrepresented groups in homeless research. APIs are not the only group who are misrepresented when data are broadly aggregated. When the largest racial groups (or dominant groups of any social category, including genders, sexualities, ages, religions, etc.) are solely reported, groups that fall outside the largest demographics are oversimplified, obscured, and even erased, potentially furthering their marginalization.

Today, APIs face increased homelessness (7–9) as well as increasing housing insecurity (39). Unhoused people from all racial backgrounds need much greater support, but our findings reveal that APIs, though relatively small in numbers, may face specific heightened risks while unhoused. By examining the unique circumstances faced by homeless APIs, research like this can address the structural vulnerability of invisibility, which is the first step toward developing tailored public health interventions to prevent tragic health outcomes.

Data availability statement

The original contributions for this study are based on publicly available data through the Santa Clara County Office of the Medical Examiner-Coroner. This open data portal (<https://medicalexaminer.sccgov.org/medical-examiner-coroner-dashboard>) compiles and summarizes data from unhoused people's autopsy reports, including year of death, age, sex, and the primary cause of death. Further inquiries can be directed to the corresponding author/s.

Ethics statement

This study, which involved deceased human subjects, was reviewed and approved by the Institutional Review Board at Santa Clara University Office of Research Compliance. The data are publicly available, and written informed consent for participation was not required for this study in accordance with national legislation and the institutional requirements.

Author contributions

JC and KS were the supervisors of the study, involved in manuscript development, and writing. MJ and AG were involved in the original gathering of cause of death data and consulted on analysis. GB, EL, MR, and KS were involved in the analysis of the project, including data management, categorizing and coding data, statistical analysis, developing figures, and tables. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The mental health of Asian American adolescents and young adults amid the rise of anti-Asian racism

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Objectives: We describe the perceptions and experiences of anti-Asian racism and violence and depression severity prior to and during the COVID-19 pandemic among a sample of Asian American (AA) adolescents and young adults.

Methods: We used data from the Young Asian American Health Survey (YAAHS), an online-recruited sample of AA adolescents (ages 13–17) and young adults (ages 18–29 years) conducted during May 2021 to March 2022. We presented descriptive statistics examining the univariate distribution and bivariate relationships of depression severity, sociodemographic characteristics, and experiences and perceptions of anti-Asian violence.

Results: Our sample ($n = 176$) comprised AA adolescents and young adults from 17 Asian ethnicities. A quarter said that the frequency and/or severity of their personal experiences of anti-Asian harassment had increased since the pandemic started. 76% indicated feeling less safe now than before the pandemic. Two-thirds reported that their depressive symptoms have increased since the pandemic started. Participants who reported feeling less safe now than before the pandemic were more likely to report increased personal experiences with anti-Asian harassment and increased depression severity since the pandemic started than those who reported feeling as safe or safer before the pandemic ($p < 0.01$ for both).

Discussion: Findings illustrate AA adolescent and young adults are experiencing multiple health and social crises stemming from increased anti-Asian racism during the COVID-19 pandemic. We urge policymakers to strengthen data systems that connect racial discrimination and mental health and to institute prevention measures and anti-racist mental health services that are age- and culturally-appropriate for AA adolescent and young adults.

KEYWORDS

mental health, Asian Americans, adolescents, young adults, anti-Asian racism, harassment, depression

1. Introduction

Mental health conditions are increasing worldwide and are shaped by a variety of social factors, and racial discrimination in particular has been found to significantly impact risk for depressive symptoms among racially minoritized groups (1, 2). While the threat of the COVID-19 virus and pandemic effects are real for everyone living in the U.S., Asian Americans

(AA) bear the additional burden of elevated anti-Asian sentiments and attacks (3–7). Such experiences and perceptions of heightened racial discrimination may act as a chronic social stressor that exacerbates adverse mental health among Asian Americans (8–10) and contribute to the existing rise in mental health struggles among Asian American adolescents and young adults.

AA adolescents and young adults are the fastest growing racial and ethnic population segment in the U.S. (11). Adolescence is a stage of rapid physical, social, and brain development; thus, AA adolescents and young adults may be especially vulnerable to increased depressive symptoms due to their exposure to multiple stressors associated with the COVID-19 pandemic, such as increased social isolation, family financial strain, and increased social media use. They also feared for their own safety as they became direct targets of anti-Asian hate crimes (12, 13).

Additionally, the health and well-being of adolescents (age 10–17) are distinctive from young adults (age 18–29), and therefore, the impacts of these stressors may vary between these two age groups. Despite the fragmented incidence data and being labeled as a “model-minority”, AA adolescents and young adults are still shown to be equally as vulnerable to developing mental health disorders as other racial/ethnic groups (14). Among adolescents aged 12–17 years, ~18.6% of non-Hispanic Asians have reported ever experiencing a major depressive episode, compared to 23.4% of non-Hispanic White/Caucasians, based on nationally representative data from the 2019 to 2020 National Survey on Drug Use and Health (NSDUH) (15). Among Asians from this dataset, about 24.5% Filipino, 20.3% Indian, 18.8% Vietnamese, 18.1% Japanese, 18.0% Korean, and 13.2% Chinese have ever experienced a major depressive episode (15). Across all Asian American adult age groups, young adults aged 18–25 years, comprised the highest group ever experiencing a major depressive episode, according to the 2019–2020 NSDUH.

AA adolescents and young adults are in a unique rapid developmental period, which makes them especially vulnerable to racial discrimination, heightening the anti-Asian climate during the pandemic. These adolescents and young adults are experiencing increased identity exploration and formation that is strongly tied to their racial/ethnic background and how their racial/ethnic identities are perceived by others (16, 17).

For example, one study found that Chinese American young adolescents who faced fewer developmental difficulties were associated with parents who socialized their children about maintaining their cultural heritage (18). These effects were not observed among older adolescents. However, the study found that both young and older adolescents with more developmental difficulties were associated with parental messages about concealing one's racial/ethnic identity during COVID-19 (18). Despite the growing recognition of the rise of anti-Asian racism in the era of COVID-19 in the national dialogue, there remains a data gap on the consequences of this increased racial discrimination on AA adolescents and young adults' mental health and well-being in the U.S. Without robust data, it is not possible to understand the breadth and depth of the intertwined effects of racism, violence, and mental health outcomes that can facilitate the design of effective and age-/culturally-appropriate public health policies and interventions to support this population group.

This climate of racial discrimination may be attributed to Orientalism and Sinophobia. Coined by Edward Said, orientalism is a framework to understand the colonial relationship between the West and the East. The East and its people, including Asia and the Pacific, are viewed through the Western gaze as subservient, savage, and in need of civilizing (read: conquest, colonizing) by the strong, sophisticated West (19). Contemporary anti-Asian racism during the COVID-19 pandemic has manifested in ways that build on this historical Orientalist context, specifically fomenting Sinophobia (i.e., anti-Chinese sentiments). In particular, those racialized as Asian in the U.S. have been flattened into a monolithic group and all assumed to be Chinese, and subsequently blamed for geopolitical tensions between the U.S. and China. As a result, those racialized as Asian in the U.S. are viewed as vectors of disease that could harm the U.S. body politic (4, 13, 20, 21).

The socio-ecological framework can be used to understand the multi-level structure and impacts of Orientalism. McLeroy et al. ecological model for health promotion posits that nested environmental levels (e.g., macro-, community-, interpersonal, and individual-level) affect individual behavior and health outcomes and vice-versa (i.e., individual behaviors may impact higher-scale levels) (22). As a macro-level ideological geopolitical climate, Orientalism structures the psychosocial and economic pathways that may impact the health of AAs. At the policy level, disinvestment in and gentrification of Chinatowns and other Asian ethnic enclaves throughout the U.S. reveal the structural violence in working-class communities, placing them at increased risk of poorer health outcomes (6, 23, 24). At the community level, this simultaneous disinvestment and gentrification occur because Chinatowns and other Asian ethnic enclaves represent sites where the working-class AAs are diseased (a perception even more pervasive because of COVID-19 first being discovered in Wuhan, China) and dirty (25), and therefore in need of sanitizing to fit an upper-middle class White aesthetic (26). At the interpersonal level, AAs, especially women, transgender, and gender non-conforming people, have been subject to racial discrimination, public harassment, and physical and psychological violence in places such as sidewalks, subways, and social media (3, 27, 28). These pathways can all influence AAs' mental health by exposing them to direct harm, chronic stress, feelings of hypervigilance and by undermining their sense of safety and belonging. Moreover, for AA adolescents and young adults, healthy racial and ethnic identity formation processes can be disrupted (16, 17).

In this article, our objective is to conduct a rapid assessment survey describing the perceptions and experiences of anti-Asian racism and depression severity prior to and during the COVID-19 pandemic among AA adolescents and young adults. We hypothesize that our online-recruited U.S. sample of AA adolescents and young adults are experiencing decreased levels of personal safety and increased levels of depression symptoms associated with either personal experiences or perceptions of a surge in anti-Asian sentiments, hate crimes, and violence during the ongoing pandemic. Findings from this survey can help illuminate opportunities for health policymakers to invest in infrastructures that effectively improve the mental health statuses of AA young people impacted by recent anti-Asian hate during the COVID-19 pandemic.

2. Methods

2.1. Study design and sample

This study used data from the Young Asian American Health Survey (YAAHS) (29), an anonymous, self-administered, online cross-sectional survey for Asian American adolescents (aged 13–17 years) and young adults (aged 18–29 years) living in the United States. The YAAHS questionnaire was developed by the authors of this report. We adopted questions about personal experiences and perceptions of violence/harassment from the Pew Research Center's American Trends Panel survey, included the validated Patient Health Questionnaire-9 (PHQ-9) instrument widely used in the general population to assess depression status, and incorporated a few open response questions about people's experiences with and perceptions of anti-Asian violence/harassment. Before dissemination, we piloted our survey with a small group of Asian/Asian American adolescents and young adults ($N = 27$) to ensure our questionnaire was feasible, appropriate for a broad range of literacy levels, and relevant. We solicited volunteers for our pilot test *via* emails to our community partners' listservs and our social networks and ended pilot testing after 1 week. Based on feedback from our pilot participants on the readability of our survey, we distributed our survey in English only. We recruited study participants through direct contact *via* e-mail and postings on social media sites such as Facebook, Instagram, and Twitter. Population Council's IRB reviewed and approved this study (Protocol #975) for conducting human subjects research. The survey and datasets generated for this study can be found in the study's page on the Harvard Dataverse Repository (29).

We focused specifically on people who are racialized as Asian and Asian American, while excluding individuals who identify as Pacific Islanders. While Asians and Pacific Islanders are often grouped together, this obscures the distinct political, social, and economic histories of two heterogeneous groups. Pacific Islanders including Native Hawaiians, Samoans, Chamorros (indigenous people of Guam) have actively resisted being lumped with Asian and Asian Americans because of their experiences with U.S. settler colonialism and indigeneity (30–32). Since our study specifically seeks to better understand anti-Asian violence in the context of the COVID-19 pandemic during which more visible Orientalism and anti-Chinese geopolitics were observed, we restricted our scope to those identifying as Asian Americans. In doing so, we sought to resist the problematic grouping of Asians with Pacific Islanders and be able to highlight the experiences and impact of racism on Asian Americans to direct appropriate actions.

Survey responses were collected through SurveyMonkey from May 2021 to March 2022. Our eligibility criteria for being included in the study sample was self-identifying as Asian/Asian American, living in the US during the pandemic, and being between the age of 13–29. Among the 323 people who initiated a survey response, 306 respondents met our eligibility criteria. However, 130 (43%) of the eligible respondents were missing information on all key exposure variables; most of these missing cases were from unfinished questionnaires (i.e., respondents stopping shortly after initiating a survey response and thus not completing the rest of survey). Respondents who had incomplete data were not significantly different on race, ethnicity, or depression severity compared to those who had complete data. Therefore, we excluded respondents with incomplete data in our analysis, making our final analytical sample 176 participants.

2.2. Key measures

The survey asked close- and open-ended questions regarding participants' personal experiences and perceptions of anti-Asian violence before the pandemic and during the pandemic when there was a rise in anti-Asian violence, depressive symptoms, sociodemographic characteristics, and coping mechanisms under the current climate. There were also open-ended questions to elicit qualitative explanations for some of these items.

2.2.1. Anti-Asian violence

2.2.1.1. Experiences of anti-Asian violence

Participants were asked whether they experienced the following types of harassment and/or violence in-person or online before the pandemic (yes/no): offensive name-calling, purposeful embarrassment, physical threats, vandalism or destruction of personal property, and physical attacks. Participants then indicated if and how their personal experiences with each type of harassment had increased since the pandemic began: yes, in frequency; yes, in severity; yes, in both frequency and severity; no; or not applicable. For analyses, we grouped all "yes" responses into one category and then created aggregate measures of whether they experienced any type of in-person and/or online harassment before the pandemic (yes vs. no) and whether their experiences of harassment had increased since the pandemic (yes vs. no. vs. never experienced harassment).

2.2.1.2. Perceptions of safety and of anti-Asian violence

Participants were asked if they felt safe in their current neighborhood (safe vs. not safe) and to rate how safe they felt in their city/town now compared to how they felt before the pandemic (dichotomized as feeling less safe vs. feeling the same/more safe now than before the pandemic). Participants then reported if they had avoided public spaces due to fear of being a target of anti-Asian violence since the pandemic started (yes/no). Participants also rated their perceptions of changes in level of anti-Asian violence since the pandemic started; responses were dichotomized as a little worse/much worse vs. the same/little better/much better than before the start of the pandemic. Additionally, we asked participants to provide responses to open-ended questions on: (1) how they felt when they saw or heard about events related to hate crimes and racism toward Asian individuals and communities since the start of the pandemic; (2) how the level of anti-Asian violence has changed since the start of the pandemic; and (3) specific changes in their movements or behaviors in public spaces since the start of the pandemic due to fear of being a target of anti-Asian violence.

2.2.2. Mental health outcomes

Recent (i.e., in the past two weeks) depression severity was measured using the 9-item Patient Health Questionnaire (PHQ-9), a commonly distributed questionnaire and diagnostic instrument assessing the degree of depression severity (33). Items asked about the frequency of experiencing problems related to the 9 DSM-IV criteria in the past 2 weeks, rated on a 4-point scale (0 = not at all to 3 = nearly every day). Items were summed to generate a total score of depressive symptoms (possible range of 0–27), with higher scores representing greater depression severity. Statistical reliability

of the measure was high (Cronbach alpha=0.90). Because total PHQ-9 scores were skewed and not normally distributed, for analyses, responses were categorized by level of depression severity (minimal 0–4; mild 5–9; moderate 10–14; moderate severe 15–19; severe 20–27) according to the depression diagnostic status (33) and then dichotomized as low (minimal or mild 0–9) vs. high (moderate to severe 10–27) depression severity.

Increase in depression severity: Participants were also asked to rate the degree to which their feelings of depression have been bothering them now in comparison to before the pandemic on a 5-point Likert scale (1 = much less than before to 5 = much more than before). Responses were dichotomized as much less than before/a little less than before/the same as before vs. a little more than before/much more than before.

2.3. Analysis

We obtained descriptive statistics of sociodemographic characteristics (e.g., school grade, race, ethnicity, country of birth, gender), experiences and perceptions of anti-Asian violence, and depression severity for the study sample. Around 25% of our sample did not report their exact age in the survey. Therefore, we instead used participants' responses to their current school grade to infer their age; people who were in middle or high school were assumed to be adolescents below 18 years old, and those who were in college, in post-graduate school, or not currently in school were assumed to be young adults between the ages 18–29. We ran Fisher's exact tests to examine the bivariate relationships between sociodemographic characteristics, depression severity, and experiences and perceptions of anti-Asian violence. We used Fisher's exact tests to assess associations between our categorical variables because the test is valid for all sample sizes, whereas Chi-square tests of independence may be unreliable when the sample is small, particularly for scenarios of low expected cell frequencies (34, 35). For the bivariate analysis comparing depression severity and experiences/perceptions of anti-Asian violence by ethnicity, we included a subcategory of "mixed ethnicity" alongside subcategories for East Asian, Southeast Asian, South Asian ethnicity, since participants could select more than one ethnicity they identified as. Statistical significance was set to the $p < 0.05$ level.

To complement the quantitative results, we conducted thematic analysis (36) on the open-ended responses regarding their experiences with and feelings about anti-Asian violence and harassment during the pandemic. For each open-ended question, we reviewed all responses, developed codes to describe the content, identified patterns among the codes to create themes, and reviewed and refined the themes generated. We reported the most common theme for each open-ended question and included excerpts of written text from respondents that encapsulate the main theme in the results section. Coding was conducted in Microsoft Excel.

3. Results

Table 1 presents the univariate distribution of sociodemographic characteristics among our sample of 176 participants. Our sample comprised adolescents and young adults from 17 Asian ethnicities, with Chinese, Vietnamese, and Filipinx most represented (35, 27,

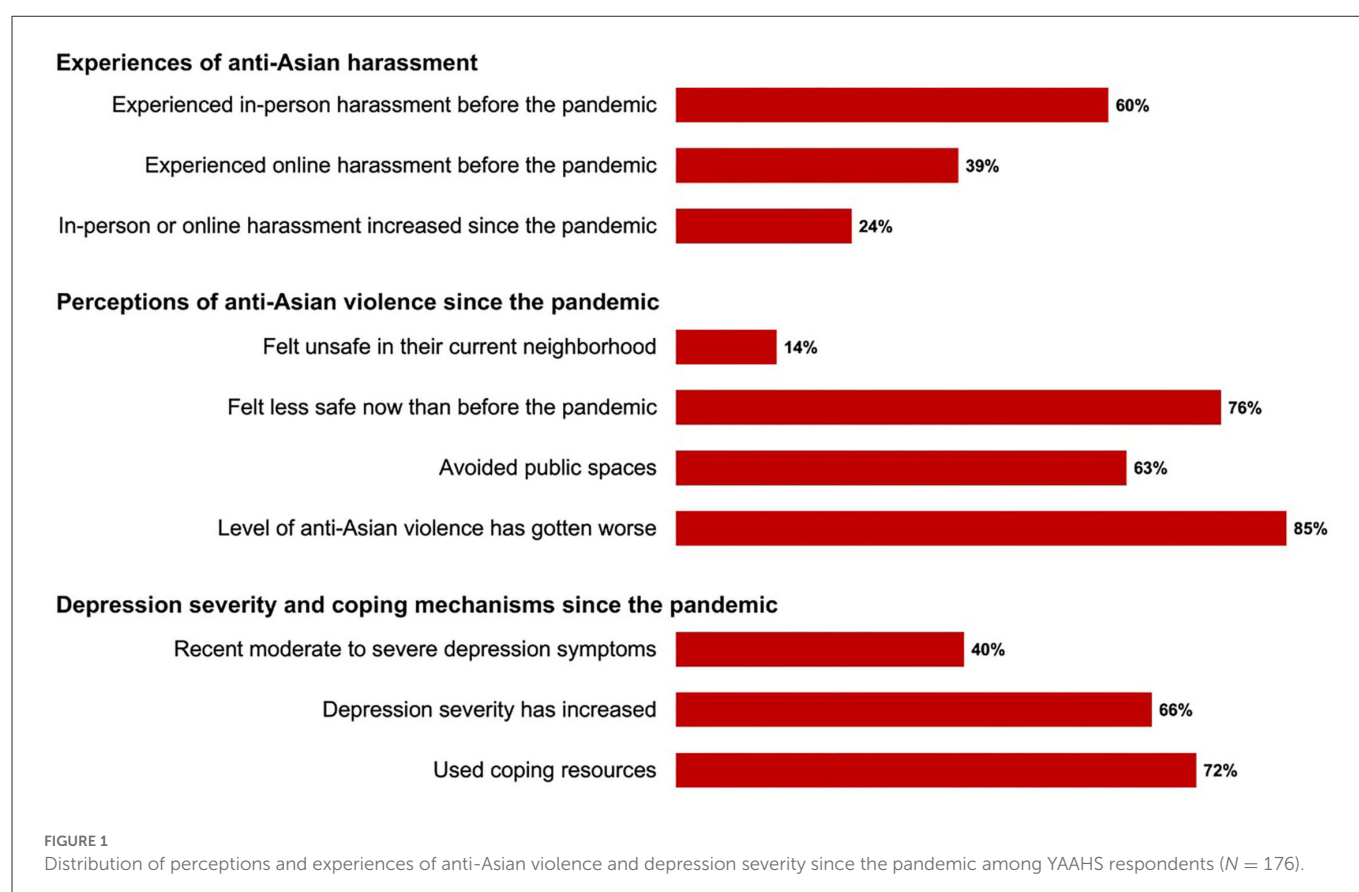
TABLE 1 Distribution of sociodemographic characteristics among YAAHS respondents ($N = 176$).

	<i>n</i> (%)
Race	
Single race Asian	141 (80.1)
Multiracial Asian	35 (19.9)
Ethnicity*	
East Asian	84 (47.7)
Southeast Asian	100 (56.8)
South Asian	2 (1.1)
Not reported	3 (1.7)
Age group**	
Adolescent (below 18 years old)	27 (15.3)
Young adult (18–29 years old)	134 (76.1)
Not reported	15 (8.5)
School grade	
Middle/high school	27 (15.3)
College	55 (31.2)
Post-graduate	20 (11.4)
Not currently in school	59 (33.5)
Not reported	15 (8.5)
Gender	
Cisgender man	26 (14.8)
Cisgender woman	120 (68.2)
Transgender man	2 (1.1)
Genderqueer/nonbinary	12 (6.8)
Not reported	16 (9.1)
Country of birth	
United States	127 (72.2)
Another country	35 (19.9)
Not reported	14 (7.9)
US Region	
Northeast	23 (13.1)
Midwest	13 (7.4)
South	30 (17.0)
West	87 (49.4)
Not reported	23 (13.1)

*Participants could report multiple ethnicities, so frequencies are calculated by dividing the *n* for each category by the total sample *N* (176) and do not add up to 100. East Asian includes Japanese, Korean, Chinese, Taiwanese, Tibetan, and Mongolian; Southeast Asian includes Vietnamese, Filipinx, Cambodian, Hmong, Malaysian, Thai, and Indonesian; and South Asian includes Indian, Bhutanese, Pakistani, and Sri Lankan.

**Age group was determined using participants' responses to school grade due to missing data on participants' exact ages.

and 18%, respectively), and from 35 states across the country, with half (49%) of participants from the western region of the US. Over two-thirds (69%) of our sample were cisgender women, with



a minority (7%) being gender queer/nonbinary. Most participants (80%) identified their race as Asian only, while 20% indicated an additional race (e.g., American Indian/Alaska Native, Black, Hispanic, Native Hawaiian/Pacific Islander, or White). A fifth of respondents were born outside of the U.S. Most of our sample were young adults between the ages 18-29 (76%), and two-thirds of participants were currently in school: 15% were in middle or high school, 31% in college, and 11% in post graduate school.

Figure 1 displays the frequencies of experiences with anti-Asian harassment and depression severity before and since the COVID-19 pandemic started among our sample. Sixty percent of participants reported experiencing in-person, anti-Asian harassment before the pandemic and 39% reported experiencing online harassment. About a quarter (24%) of participants said that the frequency and/or severity of their personal experiences of in-person or online anti-Asian harassment has increased since the pandemic started.

Only 14% of participants indicated that they currently felt unsafe in their own neighborhood, but more than half (63%) reported avoiding public spaces since the pandemic started due to fear of being a target of anti-Asian violence. When asked to select from a list of what precautions they have taken to avoid anti-Asian violence, 75% of the sample reported that they avoided going to places alone, 64% avoided going places at night, 45% avoided specific neighborhoods or locations, and 23% begun carrying pepper-spray or mace.

In an open-ended response question about their changes in movement or behaviors in public spaces since the rise of anti-Asian violence during the pandemic, many participants stated that they do not go out as often as before the pandemic. If they do, many said that they try to be more cautious and vigilant of their surroundings

and often feel uncomfortable and anxious in large, public spaces. For example, one participant said:

“I no longer ride the subway alone, and try to avoid using the subways at all if I can (I will walk, bike, or call an Uber if possible)... I purchased an annual Citibike membership in part to have an alternative method of transportation other than the subway.” (23-year old Chinese American woman)

Most participants reported feeling less safe now than before the pandemic (76%), and the majority (85%) indicated feeling like the level of anti-Asian violence had gotten worse since the pandemic started. When asked about how the level of anti-Asian violence has changed, many participants noted that although racism against Asians existed before the pandemic, the xenophobic rhetoric surrounding COVID-19 has amplified anti-Asian sentiment and increased the media coverage of anti-Asian incidents:

“Anti-Asian violence has always been present, yet our community didn’t talk enough about it. Now, people are just blatantly being more violent and racist... it is undeniably true that after Trump’s unacceptable name calling against the Asian community about COVID-19, that a rise in those crimes happened.” (19-year old Korean American woman)

“Hate crimes toward Asians have increased 8 fold. every time a major event like this occurs, america finds a scapegoat to thrust their violence onto... east and southeast Asians are taking the brunt of the violence because of covid.” (20-year old Chinese American genderqueer/nonbinary person)

TABLE 2 Distribution of sociodemographic characteristics by perceptions and experiences of anti-Asian violence and depression severity during the pandemic among YAAHS respondents ($N = 176$).

	Felt less safe since the pandemic			In-person or online harassment increased since the pandemic				Recent depression severity		
	No	Yes		Never experienced harassment	No	Yes		Low	High	
	%	%	<i>p</i> -value	%	%	%	<i>p</i> -value	%	%	<i>p</i> -value
Race										
Single race Asian	21	79		37	42	21	*	59	41	
Multiracial Asian	27	74		17	46	37		59	41	
Ethnicity										
East Asian	24	76		34	39	27		59	41	
Southeast Asian	20	80		31	47	22		56	44	
South Asian	100	0		100	0	0		100	0	
Mixed ethnicity	15	85		31	38	31		69	31	
Age group										
Adolescent (below 18 years old)	19	82		30	33	37		44	56	
Young adult (18–29 years old)	23	78		34	45	22		62	38	
School grade										
Middle/high school	19	81		30	33	37		44	56	
College	19	81		33	42	25		44	56	
Post-graduate	26	74		35	35	30		75	25	
Not currently in school	25	75		34	51	15		74	26	
Gender										
Cis-gender man	35	65	*	27	54	19		85	15	**
Cis-gender woman	22	78		36	42	23		57	43	
Transgender/Genderqueer/Nonbinary	0	100		29	36	36		25	75	
Country of birth										
United States	20	80		31	44	25		61	39	
Another county	27	73		43	37	20		53	47	

(Continued)

TABLE 2 (Continued)

	Felt less safe since the pandemic			In-person or online harassment increased since the pandemic				Recent depression severity		
	No		Yes	Never experienced harassment	No	Yes	p-value	Low	High	p-value
	%		%		%	%		%	%	
US region										
Northeast	9		91	35	39	26		61	39	
Midwest	0		100	31	38	31		54	46	
South	21		79	33	47	20		68	32	
West	26		74	34	45	21		58	42	

Row percentages are reported. P-values are from results of Fisher's exact tests examining differences in sociodemographic characteristics by feelings of safety, experiences of harassment, and depression severity. Significance codes: *** $p < 0.01$; * $p < 0.05$.

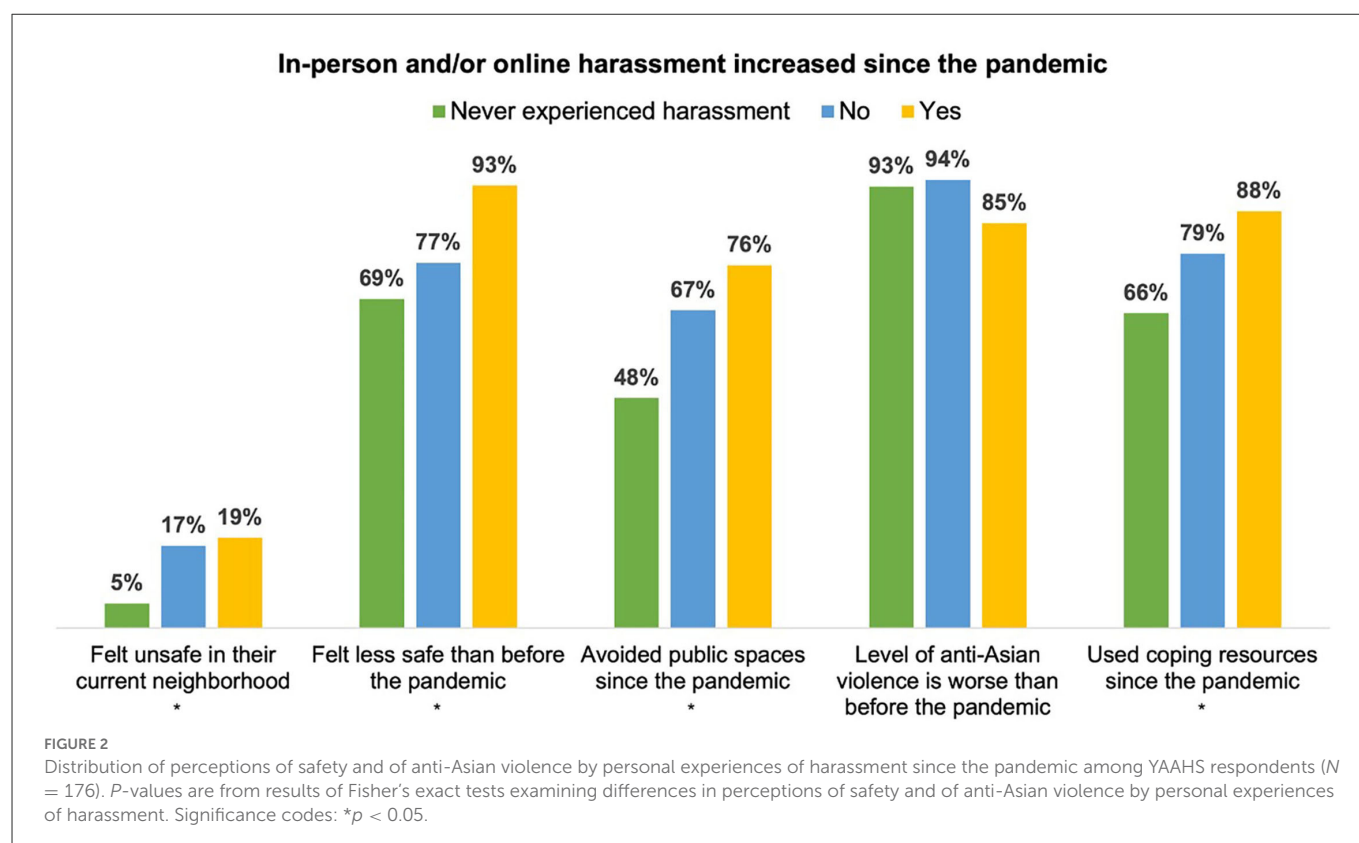
In an open-response question asking participants how they felt when they saw or heard about hate crimes and racism toward Asian individuals since the pandemic started, the most common responses were feeling sad, angry, worried, frustrated, fearful, disappointed, anxious, scared, and hopeless. Additionally, several participants described feeling especially hurt and disturbed when seeing older Asian adults being targeted for hate crimes, leading them to be particularly concerned for the safety of their older family members and relatives. For example, a 17-year old Vietnamese man wrote that he felt “scared for my family, especially my grandparents and parents”.

Forty percent of our sample experienced moderate, moderately severe, or severe depressive symptoms in the past 2 weeks (19, 12, and 9%, respectively), and two-thirds indicated that their depressive symptoms have increased since the pandemic started. Most participants (72%) had engaged in some type of coping mechanism for dealing with the negative sentiment toward Asians since the pandemic began, including talking to their friends about it (84%), talking to their family (63%), reading about how to cope with it online (42%), going to therapy (24%), and participating in a support group online (12%).

Table 2 shows the sample distribution of those who experienced and perceived increased levels of anti-Asian violence since the pandemic and reported high depression severity by sociodemographic characteristic. A significantly larger proportion of participants who identified as mixed-race Asian reported an increase in experiences of anti-Asian harassment since the pandemic begun compared to those who identified as single-race Asian (37 vs. 21%, $p = 0.04$). Participants who were middle/high school (56%) or college students (56%) were significantly more likely to report high depression severity than participants who were in post-graduate school (25%) or not currently in school (26%) ($p < 0.01$). A significantly greater proportion of participants who were cisgender women (43%) or transgender/genderqueer (75%) had high depression severity compared to participants who were cisgender men (15%) ($p < 0.01$). Most notably, transgender/genderqueer (100%) and cisgender women (78%) participants were significantly more likely to feel less safe now than before the pandemic compared to cisgender men (65%). ($p = 0.04$).

Figure 2 displays the distribution of participants' perceptions of safety and anti-Asian violence by personal experiences of harassment following the pandemic. Participants who indicated experiencing increased levels of harassment since the pandemic were significantly more likely to indicate feeling unsafe in their current neighborhood ($p = 0.05$) and feeling less safe now than before the pandemic ($p = 0.01$) compared to those who did not experience increased harassment or never experienced harassment. These participants were also more likely to report avoiding public spaces due to fear of being a target of anti-Asian violence ($p = 0.01$) and using coping resources ($p = 0.05$) since the pandemic started than those who reported no increase in or never experienced harassment. These findings suggests that increases in personal, direct experiences of anti-Asian harassment during the pandemic contributed to decreased feelings of safety after the pandemic started.

Table 3 presents the distribution of depression severity by experiences and perceptions of safety and of anti-Asian violence since the pandemic. Recent high depression severity was not significantly associated with personal experiences of anti-Asian harassment before the pandemic or perceptions of safety since the pandemic began.



However, participants were more likely to report that their depression symptoms had increased since the pandemic if they indicated feeling less safe now than before the pandemic ($p < 0.01$), avoiding public spaces due to fear of being a target of anti-Asian violence ($p = 0.05$), and feeling like the level of anti-Asian violence has gotten worse ($p < 0.01$).

4. Discussion

The Orientalist climate exacerbated by the COVID-19 pandemic has led to increased public attention toward anti-Asian racism. Prior to the pandemic, Asian American adolescents and young adults experienced varied levels and frequencies of racist harassment (37, 38) and depressive symptoms (15). Given the U.S. Surgeon General's declaration of the mental health crisis among adolescents and young adults and increased attention on anti-Asian violence, it is imperative that research and public policy must center on the mental health of Asian adolescents and young people (39).

Our study contributes to the emerging evidence base of anti-Asian violence experienced and felt by AA adolescents and young adults during the pandemic and how that is associated with depressive symptoms. These findings provide data for policymakers to invest in age- and culturally-appropriate care for this population. Additionally, study findings have implications on how best to measure depressive symptoms among AA adolescents and young adults. Below, we discuss our key findings.

Findings illustrate that most AA adolescents and young adults reported experiencing some form of in-person or online harassment prior to the pandemic. A quarter of the sample indicated that they experienced higher frequency and/or worse severity in

harassment since the start of the pandemic. Among these young adults, they were more likely to report feeling less safe and avoiding public spaces due to fear of being a target of anti-Asian violence and having increased depressive symptoms. Additionally, transgender/genderqueer individuals and cisgender women were more likely to report high depression severity than cisgender men in our study.

We showed that participants who believed their depressive symptoms got worse during the pandemic compared to before were associated with several predictors: (1) they felt less safe now than prior to the pandemic, (2) avoided public spaces for fear of being a target of anti-Asian violence, and (3) felt like anti-Asian violence had gotten worse during the pandemic. These results contrasted with participants' recent depression severity scores, which measured a respondent's depressive symptoms within the past 2 weeks; those scores were not associated with anti-Asian harassment or perceptions of safety. One potential explanation for this nuanced finding could be that relative changes in perceptions of safety and perceptions of anti-Asian violence before and during the pandemic may not directly determine current mental health status among Asian/Asian American adolescents and young adults but may instead determine relative changes in mental health. Another possible reason could be attributed to the way in which our construct of mental health was operationalized and measured in this study. The PHQ-9 scale may not be sensitive enough to holistically capture the psychological impact of perceived discrimination and threats to safety during the pandemic. More specifically, PHQ-9 assesses clinical depression (33), but there are other aspects of adolescents' and young adults' mental wellbeing (i.e., anxiety, self-esteem, social connectedness) that could be affected by racial discrimination that we did not measure in this study (40–42). Future studies should consider a broader

TABLE 3 Distribution of perceptions of safety and anti-Asian violence since the pandemic by depression severity among YAAHS respondents ($N = 176$).

	Recent depression severity			Depression severity increased since the pandemic		
	Low	High	<i>p</i> -value	No	Yes	<i>p</i> -value
	%	%		%	%	
Experienced in-person or online harassment before the pandemic						
No	62	38		44	56	
Yes	57	43		29	71	
In-person and/or online harassment increased since the pandemic						
No	63	37		28	72	
Yes	49	51		33	67	
Never experienced harassment	61	39		43	57	
Feelings of safety in their current neighborhood						
Not safe	50	50		38	63	
Safe	60	40		34	66	
Feelings of safety before and during the pandemic						**
The same as before	69	31		62	38	
Less safe now than before	56	45		26	74	
Avoided public spaces since the pandemic						*
No	63	37		43	57	
Yes	57	44		28	72	
Level of anti-Asian violence before and during the pandemic						**
Same as before	64	36		71	29	
Worse than before	58	42		30	71	
Used coping resources since the pandemic						
No	49	51		46	54	
Yes	62	38		30	70	

Row percentages are reported. P-values are from results of Fisher's exact tests examining differences in depression severity by perceptions of safety and anti-Asian violence. Significance codes: * $p < 0.05$; ** $p < 0.01$.

range of mental health outcomes to comprehensively explore the effects of anti-Asian racism during the pandemic on the wellbeing of adolescents and young adults who are racialized as Asians in the US.

Despite potential limitations in the mental health measure used in this study, our finding that increased perceptions of anti-Asian violence and threats to safety are related to perceived increases in depression severity during the pandemic support previous studies examining the negative and insidious impact of racial discrimination on mental health and adds to the burgeoning literature base on how the rise of anti-Asian racism during the COVID-19 pandemic has worsened the mental health of Asian Americans specifically (17, 43, 44). In addition to experiencing many of their formative schooling years online, due to pandemic safety precautions, Asian American adolescents and young adults' intentional avoidance of public spaces for fear of racial violence can come at the cost of sustaining social connection to support systems and having a sense of belonging in their neighborhoods, all of which may have long-term mental health consequences across the life course (45). Specifically, these experiences of isolation and anti-Asian racism may contribute to Asian American adolescents' developmental trajectory, which may be in more flux than young adults, such that it increases fear and mistrust of others, promoting intergroup hostility, concealing one's culture, and hinder positive identity development (12, 16–18).

Furthermore, our results on depression severity by gender, highlight and endorse the gendered disparities in mental health and experiences of violence (46). Cisgender girls and women, transgender, and genderqueer participants reported higher depression severity than cisgender boys and men. Scholarship in Asian American Studies and mental health show that the relationship between gendered racism and mental health is precipitated by labor, war, and migration histories of exotifying Asian women and femmes, subjecting them to misogynistic violence (47–51). Thus, future directions need to focus on the most marginalized groups in Asian American communities who are more likely to experience violence and depression.

4.1. Limitations

Our study conclusions should be considered in light of some limitations. The cross-sectional study design relies on retrospective self-report measures and thus may be subject to biased reporting, constricting our ability to draw causal conclusions or infer directionality. Our data are also unable to distinguish whether participants reported high recent depressive symptoms because of isolation during the COVID-19 pandemic or due to heightened anti-Asian violence. We were, however, able to establish a significant association between increased depression severity during the pandemic and feeling less safe now than before the pandemic because of increased anti-Asian violence. We used the adult version of PHQ-9 for all respondents regardless of age, and respondents ages 13–17 in our sample may have answered the questions on PHQ-9 differently if given the modified version of the instrument for adolescents. Additionally, our small sample size may have lacked adequate power to detect group differences. For instance,

the extent to which our results highlighted gendered disparities in depression may be a reflection that over two-thirds of the sample identified as cisgender women and may be more open to recognizing/sharing depression symptoms on an online survey. The overrepresentation of young adults ages 18–29 in our survey may have biased our sample, so we caution against interpreting our study findings to adolescents younger than 18 years old. We also had a fairly large proportion of missing cases in our data due to unfinished questionnaires and were not able to thoroughly mitigate concerns for non-response bias, so findings should be interpreted considering potential selection bias. Furthermore, our convenience sampling design and utilization of a digital survey tool may have led to an over-representation of people who feel strongly about the survey topic and under-representation of people who are not digitally connected or who have restricted internet access, limiting our ability to generalize our study results to the U.S. AA adolescent and young adult population. Despite these limitations, we were able to conduct a rapid assessment of the impact of the rise of anti-Asian violence on the mental health and well-being of a sample of Asian American adolescents and young adults. Our findings support calls to conduct additional research examining the longer-term effects of anti-Asian violence on the health of AA adolescents and young adults and to implement targeted interventions to support their mental well-being.

5. Conclusion

YAAHS was launched following the racist and deadly Atlanta shootings of eight women, six of whom were Asian, by a White man (7). As a team of Asian American researchers, mostly women, femmes, and queer, it is not lost on us that anti-Asian racism and violence predated the COVID-19 pandemic. However, in the midst of a worsening Sinophobic climate, we sought to highlight the experiences of adolescents and young adults who are often left out of the picture. Asian American adolescents and young adults are experiencing multiple health and social crises stemming from anti-Asian racism, COVID-19, and fraught U.S. social safety nets. This requires an investment in violence prevention measures for both online and in-person settings from local and national public health and education officials. We insist officials, especially those in middle and high schools and colleges to encourage and promote a culture of reporting anti-Asian hate crimes and other hate incidents by promoting and investing in anti-hate campaigns and mental health services in public forums, and offering trainings focused on anti-racism and bystander intervention. Moreover, study results support the need for increased age- and culturally-appropriate mental healthcare and social support interventions for Asian American adolescents and young adults whose developmental trajectories may be affected. While our study did not specifically point to structural interventions, we urge policymakers from across sectors to invest in anti-carceral infrastructures of healing, safety, and support for those who are at risk for and impacted by anti-Asian hate and violence.

Lastly, we write directly to Asian American adolescents and young adults: we see you and the pain that you are going through. Rather than lean into social isolation, fear, and mistrust, we extend a warm invitation for you to engage in both self-care

(e.g., accessing mental health services, limiting social media usage) and collective care. Regarding collective care, we urge you to find community and comfort with one another and with the many Asian American social justice groups around the country fighting for and with you.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

Ethics statement

The studies involving human participants were reviewed and approved by Population Council IRB. Written informed consent from the participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

JH, JC, AN, and TN contributed to the conception and design of the study. JC, AN, DH, and TD designed the questionnaire. EC, JC, and DH organized the dataset and uploaded it to Harvard Dataverse. JC led statistical analysis with support from JH. JH and JC led drafting of manuscript. AN wrote sections of the manuscript. All authors contributed to data collection. All authors contributed to the manuscript revision, read, and approved the submitted version.

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The role of community and culture in abortion perceptions, decisions, and experiences among Asian Americans

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Introduction: Culture and community can play a role in views, stigma, and access related to abortion. No research to date has documented the influence of culture and community attitudes on Asian American (AA) experiences accessing abortion care in the United States (US). This paper aims to fill gaps in research and understand how cultural and community views influence medication abortion access and experiences among AAs.

Methods: We used a community-based participatory research approach, which included collaboration among experts in public health, advocates, practitioners, and community partners to understand abortion knowledge, attitudes, and experiences among AAs. Using a semi-structured interview guide, we interviewed twenty-nine eligible people of reproductive age over 18 that self-identified as Asian American or mixed race including Asian American, Native Hawaiian, and/or Pacific Islander (AANHPI), and had a medication abortion in the US between January 2016 and March 2021. Interviews were analyzed and coded in NVivo 12 using a modified grounded theory approach.

Results: Participants described various influences of religion negatively impacting acceptability of abortion among their family and community. Lack of openness around sexual and reproductive health (SRH) topics contributed to stigma and influenced most participants' decision not to disclose their abortion to family members, which resulted in participants feeling isolated throughout their abortion experience. When seeking abortion care, participants preferred to seek care with providers of color, especially if they were AANHPI due to past experiences involving stigma and judgment from White providers. Based on their experiences, respondents recommended ways to improve the abortion experience for AAs in the US including, (1) more culturally aware abortion providers from one's community who better understand their needs; (2) clinics providing abortion services located in or near AA communities with signage in local languages; and (3) tailored mental health resources with culturally aware therapists.

Conclusion: This study demonstrates ways in which culture and community opinions toward SRH can influence both the acceptability of abortion and experiences seeking abortion care among AAs. It is important to consider family and community dynamics among AAs to better tailor services and meet the needs of AAs seeking abortion care in the US.

KEYWORDS

abortion, Asian American, AANHPI, sexual and reproductive health, immigrant health, medication abortion

Background

Asian Americans (AA) in the United States (US) are estimated to make up about 7% (around 24 million individuals) of the total US population (1). AAs are the fastest growing racial group in the US (2). Approximately two-thirds of the AA population in the US are immigrants and overall, AAs are projected to be the largest immigrant group in the US by 2050 (3). The AA community is extremely diverse (2), with members representing 50 distinct ethnic groups that speak more than 100 languages and dialects (4, 5).

Despite being a diverse racial group, research often fails to appropriately represent AAs by omitting AAs in health-related research or presenting aggregated AA data, which ignores differences in ethnic sub-groups. In cases where research is conducted among specific AA sub-groups, findings may be extrapolated and presented in a way that attributes findings to all AAs (6). This results in the health concerns of Asian American, Native Hawaiian, and Pacific Islanders (AANHPIs) being often underestimated or invisibilized in healthcare, policy, and advocacy spaces (7). Additionally, anti-Asian racism in the US (8), which has increased during the COVID-19 pandemic (9), also impacts health equity and access for AAs by presenting at three levels: individual (relating to how individual lived experience is impacted by racism), cultural (relating to how racist norms are embedded within our cultural beliefs and attitudes), and systemic (relating to societal structure that perpetuate racial inequality) (10).

Limited research exists related to AAs accessing sexual and reproductive health (SRH) care, and what research does exist, has focused on cervical cancer screening (11, 12) and the discriminatory nature of sex-selective abortion bans, which are based on the stereotype that AAs might prefer sons over daughters (evidence has shown that this is not true in the United States and AAs tend to have more daughters than sons than white Americans) (13, 14).

Looking at abortion incidence among AAs in the US, demographic data on US abortion patients collected by the Guttmacher Institute in 2008 found that 7% of respondents identified as AA and of the foreign-born respondents, 23% were

Asian or South Asian (15, 16). A recent study on abortion rates among AAs in New York City, using data from the American Community Survey from 2011 to 2015, found that although the aggregate abortion rate per 1,000 women for people who identify as AA in New York City was 12.6, the abortion rate for each disaggregated group varied (17). In particular, the abortion rate for Indians (30.5) was much higher than the aggregate rate while the rate for Korean people (5.1) was much lower. Furthermore, Wu and Ada (2018) also found that AA subgroups differ significantly in their views toward legalized abortion (18). Groups ranked by the level of support for legal abortion (starting with most favorable and ending with least favorable) are: Japanese, Chinese, Asian Indians, Korean, Filipino, and Vietnamese Americans.

Role of culture and community in abortion stigma

Culture and community can play a role in abortion stigma, which, in turn, can negatively impact people's experiences seeking and accessing abortion care and lead to decreased reproductive autonomy (19). Studies have shown that community stigma toward abortion arises as a result of cultural norms, including religious and gender norms. Religiosity, in particular, has been shown to be associated with higher abortion stigma (20–24). Additionally, gender norms that contribute to abortion stigma include stigma against women for engaging in sex outside of marriage as well as the view that motherhood is a defining characteristic of female gender identity (25, 26). Research has shown that other factors that intersect with gender, such as age and marriage status, similarly influence how someone who has an abortion is perceived—with stronger biases against young, unmarried people who seek abortions (25). It has been documented that for AA populations specifically, stigma related to sex and sexual and reproductive health (SRH) topics is common in families—which may feed into more negative abortion attitudes (27), however, stigma explicitly around abortion in AA communities has not been documented in previous literature. Additionally, beliefs about the acceptability

of sexual education and SRH services, gender and religious norms, the role of parents and partners in the decision-making process, and taboos around premarital sex are all factors that can influence abortion care seeking experiences (28–31).

Abortion stigma, along with cultural context, can create secrecy around abortion thereby dissuading people from disclosing their abortion experience, which can in turn, prompt people to undergo this process by themselves to avoid disclosure (32–34). Going through the abortion process alone can further contribute to feelings of stigma for the individual seeking an abortion (35).

Within AA communities, we know that there exists a lack of openness among households in discussing SRH topics, especially with young people, which could have implications for care (36). Differing cultural contexts between parents and children, the specific influence of mothers (including their traditional cultural values) on their daughters' sexual behavior, and acculturation have been shown to influence sexual behavior—this can be especially prevalent among immigrant communities (36–47). Within AA communities, it is unclear if or how the abovementioned cultural factors relate to abortion. In this paper, we aim to address this gap by exploring the different ways in which community and culture inform views around abortion, influence stigma around abortion, and impact abortion experience among AAs.

Methods

As a part of a larger mixed-methods study examining AANHPIs experiences with medication abortion (MA), we utilized a community-based participatory research approach (CBPR), which incorporated the expertise of public health researchers, advocates, practitioners, and community partners, to understand AAs' abortion knowledge, attitudes, and experiences. The research was overseen by a community advisory board (CAB) composed of seven members from community-based organizations and experts in AANHPI issues. CAB members were selected to represent sub-groups of interest including, LGBTQ+ AAs, Southeast Asians, Pacific Islanders, as well as an abortion provider who identifies as and works with AANHPIs to ensure these voices and perspectives were centered and uplifted in this work. Following guidance from previously conducted research (48–51), the CAB advised on each step of the research process including study design, instrument development, recruitment, and interpretation of results.

People of reproductive age over 18, who self-identified as Asian American or mixed race including AANHPI, could speak in English, and had a medication abortion in the United States between January 2016 and March 2021 were eligible to participate in the study. We specifically recruited participants who had a medication abortion, rather than a surgical abortion to address aims of the larger study, which

sought to understand AANHPI's knowledge of and experiences with medication abortion. With support from the CAB, we recruited participants using online methods such as social media platforms, listservs, and mailing lists. We aimed to recruit up to forty respondents to interview a diverse set of respondents and reach thematic saturation. Interested participants completed an eligibility screening form using an online data collection platform (Qualtrics). Based on programmed screening logic, eligible participants provided an email address or phone number, which members of the study team used for outreach. Study team members invited eligible participants to participate in a phone screen through which additional background information was collected. At this time, we also confirmed participants' interest in participating in an in-depth interview after speaking with a member of the study team and receiving additional information and scheduled interviews.

Participants completed interviews *via* phone or on Zoom, depending on the preference of the participant. For interviews on Zoom, participants had the option to use video or not depending on their level of comfort. Before starting the recording and the interview, participants provided verbal informed consent to participate in the study and to be audio recorded. Interviewers with experience in SRH research and who were trained in qualitative research methods used a semi-structured interview guide with probes to ask participants about their personal identity, community attributes (interviewers probed specifically about friends and family), community and family views on sexual and reproductive health topics, including abortion, how these views influenced their decision to have an abortion and their overall abortion experience, and how abortion care can be more culturally aware and inclusive. Upon completion of the interview, participants received a \$50 gift card *via* Rewards Genius in appreciation of their time.

Interviews were audio recorded and professionally transcribed. A study team member then removed identifying information from all transcripts and performed a quality assurance check on four interviews (14% of eligible sample) to ensure transcripts accurately matched audio recordings. We followed an iterative coding process on Nvivo 12, in which trained researchers of color, including researchers who identify as AA, from the team reviewed transcripts and together developed a preliminary codebook. The researchers then used this codebook to separately code two transcripts and further refined the codebook as needed. Once we achieved more than 95% agreement for each code, study team members separately coded the remaining transcripts. We applied a modified grounded theory approach (52) to analyze these data including (1) identifying themes and ideas emerging from the data, (2) organizing themes according to preliminary codes, (3) iteratively refining and expanding codes as necessary, and (4) describing relationships and patterns across codes and interviews. To describe ethnic identities

in this paper, we reviewed open-ended responses interested participants wrote in on the screening form when asked to describe their country of origin or ethnic roots. In some cases, participants also described their ethnic identity when telling the interviewer more about themselves at the start of the interview. When describing ethnic identities in this study, we used the language participants used to describe themselves in interviews as was available. Once the research team, which consisted of people of color, including the principal investigator (PI) and co-PI who both identify as AA, identified themes, we presented preliminary findings to CAB members to collaboratively interpret our results and build out recommendations to reflect programmatic, clinical, and communication strategies to best engage with AA communities. Allendale Investigational Review Board granted ethical approval for this study.

Results

From September 2021 to January 2022, we conducted thirty-two interviews with people who identify as AA or mixed race including AANHPI and had a medication abortion in the US between January 2016 and March 2021. Three interviews were excluded from analysis because the participants had used medication abortion pills for miscarriage management. We included twenty-nine interviews in the final analysis. Of the twenty-nine participants, twenty-six identified as Asian and three identified as mixed race including AANHPI. The average age of participants was 28 with ages ranging from 20 to 43. Participants represented three regions in Asia including, East Asia, South Asia, and Southeast Asia. One participant, who identified as mixed race, but did not provide additional information about their ethnic origins, was residing in American Samoa at the time of the interview. Participants' self-reported ethnicities included, Bangladeshi, Cambodian, Chinese, Filipina, Indian, Japanese, Korean, Laotian, Pakistani, Taiwanese, and Vietnamese. Close to forty percent of participants were born outside the United States. A majority of participants who were born outside the US had moved to the US over 20 years ago, while two participants had immigrated <10 years prior. Using the Pew Research center definition (53), we can describe the immigrant generation of twenty-three participants, including eleven first generation immigrants (whom we know were born outside the US based on a screening question); ten second generation immigrants (who shared that at least one of their parents had been born outside the US); and two participants who were considered third generation or more. All participants had their abortion before 8 weeks gestation. Table 1 shows additional background characteristics of participants. We discuss below the results related to how culture and community shaped views, acceptability, and experiences of abortion.

TABLE 1 Sample characteristics.

	Total sample n (%)
	29 (100%)
Age*	
20–24	11 (37.9%)
25–29	7 (24.1%)
30–34	6 (20.7%)
35–39	4 (13.8%)
40–44	1 (3.4%)
Education*	
Some high school or less	0
High school degree or GED	5 (17.2%)
Trade or technical school degree	1 (3.4%)
College degree	20 (68.9%)
Graduate or professional degree	3 (10.3%)
Nativity*	
US	18 (62.1%)
Outside the US	11 (37.9%)
US region for abortion*	
Northeast	6 (20.7%)
Midwest	6 (20.7%)
South	7 (24.1%)
West	9 (31.0%)
US territory (American Samoa)	1 (3.4%)
Represented Asian regions	
Central Asia	0 (0%)
East Asia	12 (41.4%)
South Asia	7 (24.1%)
Southeast Asia	7 (24.1%)
Generation†	
1 st generation	11 (37.9%)
2 nd generation	10 (34.5%)
3 rd generation or more	2 (6.9%)
Missing	6 (20.7%)

*Responses from screening questions.

†Responses as available from screening question about nativity and interview transcripts.

Cultural and community attributes

Almost all participants described attributes specific to their culture or community, both within and outside their AA-specific communities, and how these attributes contributed to and interacted with their personal identity. Participants often described an internal struggle to balance traditional family views, expectations, and strong religious influence with “western” ideals. In some cases, participants who identified as

second generation described not feeling “Asian enough” due to differences between cultural practices in the US and community views. Participants also mentioned stereotypes they experienced from others and how these stereotypes interacted with familial and internal pressure to live up to expectations. One participant who reported identifying as Southeast Asian (age 24) explained that people often assumed she was “soft spoken and innocent”. Another participant, who identified as Korean American (age 35), explained how being stereotyped as the “model minority” added to pressure surrounding expectations by saying “the whole stereotype of ... Asians, you’ve been so successful, you’ve done so well in America, so you don’t have any struggles”.

“... I need a man to guide me through life and to be my life partner because I can’t sustain myself, when me, I’m very much the opposite, and I think in the current generation of ... second generation south Asian American women, we’re trying to break out of that mold. We’re breaking out of that stereotype.”—ethnic origins in Pakistan and Bangladesh, age 24.

“... the typical Indian girl thing where like they think that you’re perfect, and you wouldn’t do anything bad”—ethnic origins in India, age 29.

When describing community and personal attributes, respondents also mentioned how others perceived their race or ethnicity. Participants often described perceptions of their race or ethnicity in relation to their “proximity to whiteness”. One participant (ethnic origins in India, age 24) said, “I think how others perceive me, I definitely have been told that I act White. I don’t know what that means exactly, but I certainly have that feeling. I definitely think that people notice my race and notice the fact that I am neither Black nor White, but I do think that I look ethnically ambiguous enough where people are like what are you, and these are questions that I’ve been asked before.” Another participant (ethnic origins in Vietnam, age 24) said, “though I have proximity to Whiteness I’m still very much treated like an other”.

Influence of community views on acceptability of abortion

Participants discussed the influence of community views and values on attitudes toward and acceptability of abortion. A majority of participants described the importance of religion among their community and family. One respondent shared that it was important to discuss abortion and how it relates to religion because people tend to associate Filipino cultures with Catholicism and may mistakenly assume that people who identify as Filipino don’t believe in the right to choice, but that

was not the case. In almost all instances where participants described the relationship between religion and views of abortion, they described religion as having a negative influence on acceptability. Two South Asian participants, both Muslims, explained that within Islam, abortion is “not in violation to religious beliefs because Muslims don’t believe in life at conception. We don’t... like the soul doesn’t enter the fetus until about like 122 or 120 days, so it’s not until like four months... I feel like most people know around four months that they are pregnant. But if you have an abortion before four months it’s not murder because there’s no life, there’s no soul. So Muslims don’t usually have an issue with abortion.”—ethnic origins in Pakistan, age 28.

Other participants explained that, while they were raised in families with more conservative views, having a more progressive external community and access to media and information on the internet influenced the progressive views they currently hold. One participant also shared that their progressive views stem from the fact that, in their opinion, protestors at clinics and other openly anti-choice individuals tend to be white, which indicated to them that as an AA person, they should be pro-choice.

“I will say like there is definitely a sense of social identity too that like a lot of anti-choicers you don’t typically see people of color and especially Asian people among anti-choice groups, right? So like when you see clinic protestors, I will say in my experience when I see clinic protestors they largely are White. I don’t think I’ve ever seen a Black or Brown or Asian person at like the clinic in Philly, which is pretty shocking, because this is a very diverse place, and yet you never see that. So I do think that there was a sense of social identity there to be like well, I’m not White, and so to me I think connecting anti-choice views to White people was very helpful in me being like well, I’m not them, so (laughs) I guess I’m this.”—ethnic origins in Japan, age 24.

Some participants also described younger generations as being more open and explained that it is more common to discuss SRH topics, especially abortion, with people their age compared to people in their parents’ or grandparents’ generations.

“I do not openly talk about that, because coming from the generation that my parents are from and their parents—once I speak out about being supportive of that, then who knows ... what doors I can open to things that will make me uncomfortable. I have accepted my grandparents and how my parents were raised, and I’ve accepted that they’ve come from a totally different country where we come from, America, where everything is so different...”—ethnic origins in the Philippines, age 27.

In nearly all interviews in which participants described interaction and communication with family members,

they explained that SRH topics and abortion were not openly discussed. Even participants who had previously said that their families or communities were not against abortion still said that this was not a topic they discussed openly, demonstrating stigma surrounding these topics, even in cases where it is considered more acceptable among families.

Many participants also explained that sex before marriage was unacceptable in their family and community and often equated the stigma of getting pregnant out of wedlock with the stigma of having an abortion.

“you know, anything that deals with sex, to be honest, it’s very, very like hush-hush, taboo. . . . a girl gets pregnant outside of marriage it always is—like the girl is always the one who takes the blame. She’s the one who is shamed. And it’s just a huge stigma. And so I know that that is, even today, how Korean culture views pregnancy or, you know, abortion and sex, and I think a lot of those kind of beliefs still—it’s still around, even in Korean-American cultures”—ethnic origins in South Korea, age 35.

Participants also described perceptions related to pregnancy and abortion that they had heard in their communities, such as all pregnancy should end in life, and a lack of understanding that it was okay to not have a child because one was not ready. Another participant further demonstrated how these views led to fear during the abortion experience due to stigma and stories she had heard growing up related to abortion.

“I think I had a lot of fear going into the abortion process since I think growing up I kind of—It’s very—it was a very stigmatized topic, and I think I kind of thought there would be some permanent like damage done to me, or like my ability to conceive in the future”—ethnic origins in China and Japan, age 24.

Additionally, although a majority of participants considered themselves pro-choice or pro-abortion, some participants expressed feelings of shame and guilt when discussing their own abortion experience. These feelings of shame and guilt were not in relation to the decision to have an abortion, which many participants made clear throughout the interview; rather, participants related these feelings to becoming pregnant in the first place. Participants often felt internal stigma and worried that others would view them as irresponsible.

“It’s just like I feel like super embarrassing that I had an unintended pregnancy with someone that I didn’t want to create like a family with. I thought it was just very shameful. And I just—it was just really embarrassing, and so I hated

myself because I was like I already—I had one, right? And then it was like I got myself into the same situation again and it could have been prevented if I was being smart about it, but like—yeah. It was just really embarrassing for me, for more of like having an unintended pregnancy than actually having the abortion I think.”—ethnic origins in India, age 24.

Disclosing abortion decision and experience with family

Due to lack of openness around discussing SRH topics within families, a majority of participants chose not to tell their parents about their decision to have an abortion and about the abortion itself. In most cases, participants assumed their parents would be upset, but explained that they could not confidently speak to how their parents would react given a lack of previous conversations related to the topic. Other reasons participants chose not to tell their family about their abortion included: fear of judgement, stigma related to having sex outside of marriage and getting pregnant, as well as stigma surrounding abortion.

“But the community views about having—like getting pregnant while not married I think is what drove- that had more impact, I think. I was more concerned about what my family would think, especially my grandparents in India. It would have been awful. I just feel like it would not have gone well if they ever found out about that. So I think more of that kind of perspective of like getting pregnant like that, I wasn’t really thinking about views about abortion, I wasn’t thinking about it like that.”—ethnic origins in India, age 24.

Some respondents shared that this lack of discussion on SRH issues extended to them never having a regular gynecologist growing up—and many respondents shared that not having a gynecologist resulted in them feeling lost about how to seek care when they recognized their pregnancy.

A few respondents who did share their abortion experiences with members of their family experienced different reactions. Some respondents described being shamed when they shared their abortion decision—one respondent was forced to talk to religious, pro-life people, and people who regretted their abortion, while another described her abortion decision being used against her by a family member in an unrelated circumstance. Another respondent mentioned that when she shared her pregnancy news with her family, she did not feel supported—because it felt like they made the decision for her to have the abortion, rather than help her think through her options. So, although they did not pose a barrier, they were not supportive in the way she would have liked. Others described different members within the family having different reactions—some supportive and some not.

Some respondents chose to not use their insurance to pay for the abortion because they were covered by their parents' insurance and did not want them to find out about the abortion. Another had to lie to their family about needing money for a security deposit in order to borrow the money for the abortion, and this led them to feel very guilty about using their parents' money. One respondent, who lived with her family, booked a hotel for the night that she was taking the abortion pills, because she did not want to go through the abortion at home.

Some mentioned not having anyone to turn to for advice, and having to lie to their family on the days they were going through the abortion, all of which they found challenging. Overwhelmingly, participants mentioned feeling lonely while undergoing their abortion because they were unable to seek the support of their family.

"I really wanted the feeling of like an older person or like, yeah, someone who could be like a family member to like reassure me or just be like, yeah, this is what it's like or like you're going to be okay. But I didn't feel like that was accessible." - ethnic origins in Japan, age 32.

Most respondents described keeping their abortion a secret as burdensome, heavy, and isolating. As one respondent described,

"I think that having to do all this—went behind their backs and like not telling them about it, it was just a lot to handle, just because like I feel like I had to be so secretive with it, about what I was doing with my time, and like my parents were very worried about me during this time already. They were calling me every day, so yeah, that was kind of hard."—ethnic origins in Taiwan, age 22.

Another respondent shared how having the abortion could be isolating, even if it took place close to their home.

"Everybody has everything to say if you're having the baby, but if you're not having the baby it's—it's not something you talk about, and it's usually something that's not positive. And so I mean, even reaching out to the Planned Parenthood, it kind of felt like I had to reach outside of my community into somebody else's community, even though it was... in my city, and so it's actually in my community... It's almost like... people who fly out to Mexico, have an abortion and come back because it's somewhere away from home and somewhere that you get your stuff done and you come back, and nobody would know the difference."—ethnic origins in China, age 29.

On the other hand, one respondent shared that even though they were keeping their abortion a secret, they felt empowered by their decision to have the abortion, putting themselves first for a change.

"I always have to think about my family, my husband first... this is like the only time that I feel like I've made a decision for myself. But at the same time thinking about my family, but in a way where it's like I'm doing this for me and not for them kind of thing."—ethnic origins in the Philippines, age 27.

Healthcare system interaction

Interaction with the healthcare system was a key part of the process that shaped people's experiences and differentiated responses between subgroups.

One respondent highlighted the difference in approach to healthcare utilization among Japanese communities.

"I think my upbringing, whether it's like my parents' like values or just kind of the way the healthcare system works in Japan, in contrast to how people conceive of—receive—seeking healthcare here is like if something is going on, go get it looked at right away, like the cost, like what else, what better thing could you spend your money on, so like any little thing that I have going on, I do seek care, and I think the mentality here is like until it's literally killing you like don't by any means, right?" -ethnic origins in China (raised in Japan), age 31.

This respondent shared being shamed and stigmatized for the number of appointments they had, which ultimately led them to never go back to that particular healthcare system for care.

Some respondents shared feeling stigmatized by healthcare professionals when seeking an abortion, for getting pregnant, choosing to abort, and/or having had prior abortions. Others shared being stereotyped based on how they looked and/or how old they looked—for instance, assuming they were weak (because of their petite build), or that they must be smart, young (and hence shaming them for getting pregnant/having an abortion), or that they were stupid (if they did not speak English well).

"I wish that when I first went to the clinic I wasn't so judged by that doctor and like basically shamed by him. That was—it was already at the time shameful enough that I was requesting for abortion pills, so the fact that he was just double shaming me by, you know, giving me dirty looks and then saying like we can't help you here was really disappointing and just made the process like even more stressful."—ethnic origins in South Korea, age 30.

Respondents shared feeling more comfortable in healthcare interactions where their provider was a person of color, especially if they were AANHPI. Some respondents shared that

the discomfort from being seen by a White provider stemmed from discriminating experiences that they themselves or their community have had where their concerns had been dismissed. Participants described feeling more welcome, heard, and seen, when interacting with a provider from their own community. Having people of color in other roles, especially women of color, in the healthcare setting also made respondents feel more comfortable about seeking care.

“It was such a great experience because like I had dealt with the non-Asian doctors trying to say like oh, well that doesn’t sound—that sounds made up, or that’s not right, things like that. And it was kind of—it was almost like comforting to finally not have that and not see that. And I think—I believe the people working the front desk were also all like people of color too, whether they were Asian or Hispanic or anything, it was just kind of nice to see.”—ethnic origins in Japan, age 24.

Some respondents shared that there was a general mistrust of doctors in their community. One respondent, however, shared their belief that since Filipino Americans make up a large portion of the medical community, there is not as much mistrust of doctors among Filipino Americans compared to other AA subgroups.

“I think mistrusting doctors is not as common among Filipino Americans because Filipino Americans make up a large portion of the medical community... So I don’t see that same level of mistrust... I think it is also different between specifically being Filipino American versus being Asian American.”—ethnic origins in the Philippines, age 27.

However, a few respondents shared being subjected to stereotyping even though they went to a Black, Indigenous, or person of color (BIPOC) provider. Although there is so much diversity among AAs, participants remarked that the stereotypes are unilaterally applied to all communities. One respondent described being stigmatized by a provider who, like this respondent, was also South Asian.

“It would have been really nice to have someone from the same background as me, but I say that with caution because my current OB/GYN is also South Asian and it’s also like a weird dynamic as well with that... I also feel like I’ve received judgment from her as well, because I said on my chart that I’ve had two pregnancies and I just feel like she judged me for that... at times, I felt like being talked down to, like kind of like saying, oh, you should already know this type of thing... I feel like as my doctor, you should be helping me learn to make healthy decisions instead of making me feel stupid that I wasn’t aware or whatever.”—ethnic origins in India, age 24.

A few respondents discussed the lack of representation of AAs in the reproductive health space and in abortion stories and how these led to stereotypes being propagated.

“I think that they were feeding into the stereotypes of what they—what like the cultural stereotypes of perceptions about family and timing of having children, and then also abortion. And I think a lot of that in part has to do with the fact that AAPI people, there’s not a lot out there or there’s not a lot of representation out there of them and their experiences around abortion care... There’s like a disconnect in terms of training and education about cultural competency in OB/GYN and specific to AAPI cultures.”—ethnic origins in the Philippines, age 43.

As one respondent put it, *“the face of reproductive justice is kind of White still”* (ethnic origins in Japan, age 32). While reproductive justice, defined as “the human right to maintain personal bodily autonomy, have children, not have children, and parent the children we have in safe and sustainable communities” (54) was created and is led by Black women, this respondent relates the lack of Japanese-American or Asian-American role models in the abortion narrative, despite having AA friends involved in abortion activism, to the reproductive justice framework.

Participants’ reflections on improving medication abortion experiences for AA populations

Respondents reflected in various ways about how abortion experiences might be improved for AA populations. One theme that emerged was racial and ethnic concordance between providers and patients. Participants recommended being cared for by providers from one’s community who understood their needs and were culturally aware. This included understanding that they themselves as providers may hold biases and stereotypes and should work consciously to unlearn those views. One participant shared that providers should be aware of how people’s ability to access care was linked to colonialism and systemic racism. Other respondents shared that they just wanted to be seen as a person needing abortion care, and not judged by how they looked and how old they looked. A few participants described wanting their provider to connect with them at a personal level by talking to them about their background and context.

Participants also reflected on the location of clinics offering abortion services—suggesting that more clinics be located in or near communities with Asian groups, with signage in

local languages, and accessible to people with disabilities. One respondent shared that seeing signage in their local language made them feel safer and could help make abortion more acceptable in their community. Respondents also shared that having paperwork in their local language and/or translators and interpreters available at the clinic would signal more inclusive care, and be especially useful to immigrant communities. Another respondent shared that a “community hub”—where doctors and clinic staff were all from the same community as the people they were serving, and providing not only medical care but also serving as a place for the community to come together to celebrate cultural events and host gatherings—could also help local communities feel at home.

One respondent also suggested that Asian American advocacy organizations like the National Asian Pacific American Women’s Forum (NAPAWF) could work with pro-choice providers or associations like Medical Students for Choice to sensitize them to the myriad cultures within AANHPIs and their differing perspectives on SRH and abortion, as a way to build a cohort of more culturally-aware providers.

Another participant shared that there was a need for more inclusive services for those who practice Islam.

“I’ve never really experienced like a truly inclusive experience (laughs) being Muslim. And so I don’t know what that would look like.”—ethnic origins in India, age 32.

Although respondents shared that growing up with a narrative that demonized, sensationalized, and/or trivialized abortion resulted in them not seeking the mental health support they needed and taking longer to come to terms with their abortion, many respondents also highlighted the need for tailored mental health resources. Respondents described needing therapists who were culturally aware, had similar upbringing, could speak the same language, and have experienced an abortion. Support groups for people in the same community, either held in-person or virtually, was another recommendation from participants. One respondent also suggested that clients should be given the option to be a part of these groups and/or receive culturally-relevant reading material that would help them relate to others from their community who have also undergone the process and help “make sense of their experience”.

“I’ve just had therapists who are White before who have said things like, oh, like just be very transparent and set boundaries with your parents, which is not really something that exists in Asian cultures ...—I think some people at least like can feel very, very drained after an experience like this. I mean, help or therapy that is really irrelevant or not understanding just can make things worse really.”—ethnic origins in South Korea, age 24.

Part of having culturally-inclusive mental health resources included understanding whether and when one may want to share their abortion experience with their family. One respondent shared that the clinic they went to forced mental health services on them—and the help offered lacked understanding around family dynamics and cultural expectations in their community, which led to questions and recommendations around talking to their family—something the respondent knew would have only been counterproductive. These experiences reflected the need for training and education for providers on aspects of Asian culture and how they may relate to care seeking.

Discussion

Our findings begin to provide insight into the preferences, needs, and experiences of abortion care among AAs. Our findings indicate that AAs balance a tenuous relationship between wanting family support and acceptance but also establishing ways in which they are different from their parents and community. Maintaining good parental relationships and avoiding parental disappointment is a factor that has been shown to influence individual abortion access and experience in other contexts (55). We see this echoed in our findings among AAs as well. Despite not having open conversations about sex within families, our study indicates that AAs craved support from family members, demonstrating the importance that family holds among AAs. Additionally, respondents expressed wanting support from the time of abortion decision-making until well after the abortion procedure is completed. Given that AAs are not receiving the support they desire from families, counselors and mental health support professionals should work toward offering care throughout the abortion journey of their AA clients.

Additionally, AAs are more likely to live in multigenerational households with higher caregiving obligations, which may contribute to the fear of family judgement (56, 57). Living in closer proximity to and regularly providing care for family members makes it more difficult for someone to maintain their privacy when seeking an abortion, as was seen in the number of ways respondents navigated interactions with their family when preparing and undergoing their abortion. Hence, when offering mental health support, counselors should keep in mind the living situation of and socio-cultural expectations that come with being AA.

Most respondents described feeling isolated because they were unable to share their abortion with their parents/family. Particularly, many participants were unaware of how their families may react to the disclosure given that these topics were never discussed. Additionally, respondents seemed more concerned about the stigma around having sex than having the

abortion itself. Our study indicates that abortion stigma may begin with the act of having sex, particularly outside marriage (and community/family members finding out about it), rather than with abortion decision-making, as most literature in the United States may indicate. One study in Indonesia refers to the “social value of virginity” and abortion dispelling the virginity status; (25) and another study explores the need among South Asian Americans to maintain their virtuous image within their community (20). Further exploration of how expectations around virginity interact with abortion stigma within the wider AA community is warranted.

Our study demonstrates that different groups within AAs view abortion through different religious and cultural approaches. As has been found in other studies (21, 26, 32), most of our respondents spoke about the influence that religion had on their abortion experience. South Asians tended to discuss community/culture influencing abortion stigma rather than religion, as compared to other groups. Muslims in our study, however, specifically discussed the role of Islam in impacting their view of abortion. These differences in perception highlight the diversity of beliefs and factors influencing abortion care within AAs.

Our study also adds to the growing literature on the impact of racism on health. As reported in other studies focused on communities of color (58), our respondents also sought out physicians who were AA or at least identified as a person of color with the hope that their experience would be better. Policymakers should implement strategies to build a diverse healthcare workforce that includes underrepresented minorities (58).

Similar to experiences of racism within the healthcare system that have been documented among Black (58) and Latinx (35) populations, the AAs in our study also experienced individual racism in their interactions with the healthcare system. Respondents recount their concerns being dismissed by White providers and their preference for providers of color, especially those from their own communities. It is striking to see the stereotypes that BIPOC providers, even those who identify as AA, propagate within their own communities, reflecting the lack of understanding among AAs about the diversity among their own communities. This highlights the need for more research, tools, and resources that center the diversity of AANHPI communities and showcases the differences in perspectives on, access to, and healthcare utilization of SRH services among subgroups, as well as cultural sensitization trainings for all providers.

Our findings demonstrate that stereotyping is not restricted to only the healthcare settings—respondents described being stereotyped in other aspects of life by those around them and being assessed by their proximity to being White. Additionally, our study findings indicate that like Black (58) and Latinx populations (35), AAs also experience gendered racism in expectations related to women being “soft spoken”

and “innocent”. However, while Black and Latinx communities report being viewed by “negative” stereotypes (35), respondents in our study shared that there was an expectation for them to conform to the positively-viewed “model minority” myth. This highlights the need for efforts to break the stereotypes by lifting up the voices of AANHPI communities and have more representation of diverse AANHPIs in all walks of life, including media.

When discussing AA experiences, it is also important to highlight ways in which findings may be similar or different across ethnic groups. Research conducted with and among AAs and their health outcomes often aggregates various AA subgroups together, masking important differences between Asian ethnicities (6). Aggregation also ignores the varied social histories of the different subgroups, which impacts adversely how health outcomes among specific AA communities are understood (59). Such perceptions view AAs as a monolith, without acknowledging the disparities among subgroups. While we identified common threads in the way participants in this study described cultural and community influences on their abortion experience, some participants also discussed culture specific attitudes or practices that stood out from other AA experiences in this study. Other studies documenting AA health outcomes (60–63) and access to care (64, 65) with disaggregated data report have also reported differences between subgroups, including differences related to sexual and reproductive health (SRH) outcomes (8, 66). Understanding abortion experiences among different AA subgroups can help guide policy and practice related to abortion care that will better meet the needs of AAs in the US overall as well as the needs of AA subgroups.

Our study is not without limitations. We were unable to recruit respondents identifying as Native Hawaiian (NH) or Pacific Islander (PI), and only very few ($n = 3$) of our respondents identified as mixed race that may include NH or PI. Additionally, although close to forty percent of our respondents were born outside the United States, detailed differences in views and experiences were not captured in our study. Future research should include purposive recruitment of different subgroups to tease out the differences between AANHPI communities; and AANHPI immigrants (recent as well as across different generations) to understand the impact of acculturation on MA perspectives and access. Additionally, exploration of culturally appropriate, inclusive abortion care among Muslims in the United States, is also another area that needs further research. Lastly, our study has documented aspects of individual racism that respondents have experienced. Future work should aim to investigate how structural and cultural racism impact AAs. Finally, given the aims of the larger study, we only interviewed people who had a medication abortion so we cannot generalize these findings related to abortion experience to other types of abortions. Future work should seek to understand how culture and community influences expand to AA experiences with procedural or later abortions.

Conclusion

Our study explored how community and culture shape and influence perspectives around and experiences with abortion in the AA community. Our findings contribute to a better understanding of AA communities' needs and preferences when accessing abortion. With the recent Supreme Court decision overturning *Roe v. Wade* (67), people of color, including AANHPIs are more likely to be adversely impacted. Our study shows that AAs already experience discrimination when seeking care. Policymakers, clinicians, mental health professionals, and advocates should work toward ensuring that AANHPIs receive the care they deserve, integrating aspects of community and culturally-inclusive care in their practice.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation, upon request to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by Allendale Institutional Review Board, United States. Written informed consent for participants was not required for this study to maintain participant confidentiality due to the sensitive nature of the study.

Author contributions

SrC and SuC conceived and designed the study and secured funding for the work. SrC, KK, and BG were involved in data collection. SrC, KK, BG, AO, and AL contributed to data analysis. SrC, KK, and AO authored the manuscript. AL, JC, BG, and QD reviewed the manuscript and provided feedback. All authors contributed to the article and approved the submitted version.

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Conflict of interest

SrC, KK, and AO were employed by Ibis Reproductive Health, Cambridge, MA, United States. AL and SuC were employed by National Asian Pacific American Women's Forum. BG was employed by Ibis Reproductive Health, Oakland, CA, United States.

The remaining authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Solidarity and strife after the Atlanta spa shootings: A mixed methods study characterizing Twitter discussions by qualitative analysis and machine learning

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Background: On March 16, 2021, a white man shot and killed eight victims, six of whom were Asian women at Atlanta-area spa and massage parlors. The aims of the study were to: (1) qualitatively summarize themes of tweets related to race, ethnicity, and racism immediately following the Atlanta spa shootings, and (2) examine temporal trends in expressions hate speech and solidarity before and after the Atlanta spa shootings using a new methodology for hate speech analysis.

Methods: A random 1% sample of publicly available tweets was collected from January to April 2021. The analytic sample included 708,933 tweets using race-related keywords. This sample was analyzed for hate speech using a newly developed method for combining faceted item response theory with deep learning to measure a continuum of hate speech, from solidarity race-related speech to use of violent, racist language. A qualitative content analysis was conducted on random samples of 1,000 tweets referencing Asians before the Atlanta spa shootings from January to March 15, 2021 and 2,000 tweets referencing Asians after the shooting from March 17 to 28 to capture the immediate reactions and discussions following the shootings.

Results: Qualitative themes that emerged included solidarity (4% before the shootings vs. 17% after), condemnation of the shootings (9% after), racism (10% before vs. 18% after), role of racist language during the pandemic (2 vs. 6%), intersectional vulnerabilities (4 vs. 6%), relationship between Asian and Black struggles against racism (5 vs. 7%), and discussions not related (74 vs. 37%). The quantitative hate speech model showed a decrease in the proportion of tweets referencing Asians that expressed racism (from 1.4% 7 days prior to the event from to 1.0% in the 3 days after). The percent of tweets referencing Asians that expressed solidarity speech increased by 20% (from 22.7 to 27.2% during the same time period) ($p < 0.001$) and returned to its earlier rate within about 2 weeks.

Discussion: Our analysis highlights some complexities of discrimination and the importance of nuanced evaluation of online speech. Findings suggest the importance of tracking hate and solidarity speech. By understanding the conversations emerging

from social media, we may learn about possible ways to produce solidarity promoting messages and dampen hate messages.

KEYWORDS

anti-Asian racism, Twitter, machine learning, qualitative content analysis, solidarity

Introduction

On March 16, 2021, a white man shot and killed eight victims, six of whom were Asian women (1). The victims were Daoyou Feng, Hyun Jung Grant, Suncha Kim, Paul Andre Michels, Soon Chung Park, Xiaojie Tan, Delaina Ashley Yaun, and Yong Yue. The murders took place in a massage parlor and two different spa salons, places that the shooter described as “temptations he wanted to eliminate” as a method to address his sex addiction (2). This event occurred during a period of rising concern about anti-Asian racism, sparking outrage across the country and evoking fear in the Asian American community. In response, communities held vigils and organized rallies to remember the victims and called people to take action.

Set against the increased hate crimes committed against Asian Americans and Asians living in America during the COVID-19 pandemic (3, 4), this tragic massacre brought more attention to the racism experienced by Asian Americans and sexualization of Asian American women in particular (5). Asian American women working in spa salons or massage parlors are often assumed to be sex workers, which incites fetishization, objectification and racial sexualization (6–8). The racial sexualization of Asian women dates back to the 1800s (7) and has persisted into present day, with Asian and Asian American women often fetishized as being “exotic” creatures that are small, cute, and submissive (5, 8–10).

The COVID-19 pandemic ushered in a rise in anti-Asian sentiment and hate crimes (11, 12). Reports of anti-Asian physical assaults rose from 10.2 to 16.7% between 2020 and 2021, and online hate incidents increased from 5.6 to 10.2% (3). The spike in hate crimes against Asian Americans during the pandemic has been associated with an increase in the usage of terms for coronavirus such as “Chinese virus” and “Wuhan virus” (13). The spread of the usage of “Chinese virus” was catalyzed by highly influential political figures on social media (14). Attaching ethnicity and race to SARS-CoV-2, the causative agent of COVID-19, increased stigma against Asian Americans and Asians around the world (13, 15, 16).

In tandem, the police murders of George Floyd, Ahmaud Arbery, Breonna Taylor, and other unarmed Black Americans in 2020 ignited a nationwide discussion about race and racism (17). With the confluence of racial reckoning in the US and the COVID-19 pandemic, the timing of the Atlanta spa shootings renewed conversations of the role of racism in this incident and beyond. An understanding of the quality and quantity of public discourse surrounding race and racism in the United States following this tragic event can provide important insights to initiate interventions to protect marginalized groups and galvanize change during moments of heightened awareness of social injustice (18).

Twitter provides insight into the public’s reaction to racialized events (13, 17). A 2016 Pew Research Center study found, over a 15-month period, 60% of tweets discussing race were connected to a current race-related event (17). In past studies, Twitter data have

been used to analyze perspectives about race and the COVID-19 vaccine (19), the use of stigmatizing COVID-19 terms and Anti-Asian sentiment (11, 13), the aftermath of the shooting of Michael Brown (20), and the killings of Ahmaud Arbery, Breonna Taylor, and George Floyd (18). Following the Atlanta spa shootings, there was an outpouring of public support expressed on Twitter, with trending hashtags such as #StopAsianHate. Examining discourse related to the Atlanta spa shootings provides a unique opportunity to examine trends in themes in speech toward the Asian American community in the aftermath of this tragic event. Therefore, the present study aimed to: (1) describe qualitative themes of tweets related to race, ethnicity, and racism immediately following the Atlanta spa shootings, and (2) examine temporal trends in expressions of a new measure of hate speech and solidarity before and after the Atlanta spa shootings using a new methodology for hate speech analysis.

Methods

Overview

We used a mixed-methods approach that integrated qualitative content analyses with state-of-the-art machine learning analysis of race-related publicly available tweets. Qualitative content analyses provided in-depth understanding of the themes, and machine learning assessed national trends in the data as well as quantified hate speech and solidarity speech. A random 1% sample of publicly available tweets was collected from January 2021 to April 2021 using Twitter’s Streaming Application Programming Interface (API). Details of the data collection process including the full keyword list are available (21). We restricted our analyses to English language tweets from the US that used one or more of 518 race-related keywords compiled from racial and ethnic categories used by prior studies examining race-related online conversations (22) and an online database of racial slurs. Tweets were classified into four main racial/ethnic categories: Asian, Black, Latinx, and White according to the keywords used. For this paper, we focus on tweets referencing Black and Asian people. The 202 keyword list for Asian and Black related tweets are presented in [Supplementary Table 1](#). The analytic sample included 708,933 tweets.

Content analysis

Through content analysis we sought to understand the national discussion before and after the Atlanta spa shootings on March 16, 2021. Our qualitative content analysis provides information about observed trends, topics, and themes to understand this time period. Our team has been continually collecting Twitter data since 2015 to examine changes in racial attitudes over time. As a result, we had

access to tweets before the incident and used them to establish a baseline. Our study analysis had a random sample of 1,000 tweets referencing Asians preceding the Atlanta spa shootings (January 1 to March 15, 2021) and 2,000 tweets referencing Asians after the shootings (March 17 to March 28, 2021) to examine potential temporal changes in discussion topics and sentiment.

The team developed the codebook based on a literature review and preliminary analysis of the first 200 tweets from the sample to solidify the codes and their definitions. The codes acted as broad categories. The final codes were: (1) solidarity, (2) condemning shootings, (3) racism, (4) role of racist language during the pandemic, (5) intersectional vulnerabilities, (6) relationship between Asian and Black struggles against racism, and (7) common discussions (tweets not relevant to the spa shootings incident). The next 600 tweets were triple-coded by three study team members independently, and the remaining 1,200 tweets were double-coded by two study team members independently. Six members of the study team discussed all discrepancies in the coding and came to a consensus on the final code for each tweet. The counts were reported for each code category. Once all the tweets were coded, the qualitative analysts met to discuss and finalize specific themes within each code. Utilizing thematic analysis, the team analyzed tweets within each code to identify themes (23). There were multiple themes highlighted within each code category that provided nuanced meaning about online speech pertaining to race and ethnicity. With this extensive consensus-building process, we sought to maintain data trustworthiness through utilizing multiple data analysts from various geographic regions of the US and who identify as Asian, Black, and White.

Hate speech measure, a new machine-learning methodology

We also employed a supervised machine learning to quantitatively analyze the sentiment of 708,933 tweets. Machine learning uses algorithms and models to present patterns from the data, and the hate speech methodology is a type of machine learning. Our recently developed method combines faceted item response theory (IRT) with deep learning to measure hate speech on a continuous, interval spectrum. Details on the development of the hate speech measure are documented (24). The construct of hate speech was operationalized as a composite of nine simpler phenomena (components) that could be labeled as ordinal survey items by human reviewers: sentiment, respect, insult, humiliation, status, dehumanization, violence, genocide, and attack-or-defense. A 10th component for hate speech itself (yes/no/unclear) was included for benchmarking purposes. Solidarity speech was defined as hate speech scores <-3 and racist speech was defined as hate speech scores >0.5 . Each tweet was further scored on the components of hate speech.

Supervised machine learning models, such as our hate speech model, require training data to understand how a human reviewer would rate the tweet. The training dataset—consisting of 50,000 social media comments sourced from YouTube, Twitter, and Reddit—was labeled by 10,000 United States-based Amazon Mechanical Turk workers on those components of hate speech (the dataset is available at <https://huggingface.co/datasets/ucberkeley-dlab/measuring-hate-speech>) (25). Amazon Mechanical Turk is a crowdsourcing

marketplace where tasks can be performed virtually. Table 1 shows the questions from the annotation guide. The crowdsourced labels were combined *via* a non-linear IRT scaling transformation into a continuous outcome measure, yielding an interval-valued spectrum ranging from violent hate speech on one extreme (+5.0) to supportive identity speech on the other (−8.0). During the scaling process, the IRT model simultaneously estimates and eliminates the interpretation bias of the human labelers. The response quality of each individual labeler was also estimated using the IRT model, allowing responses from low-quality labelers to be removed (30% of labelers). The IRT scaling procedure was then integrated with a multitask deep learning model based on the RoBERTa-Large language representation architecture for automated prediction on new data, which estimates both the continuous hate score and each of the constituent components (26). The resulting model achieved a cross-validated correlation of 84% and mean absolute error of 0.85 at predicting the continuous hate speech score. This model is far more accurate than the 66% correlation and 1.7 mean absolute error of Google Jigsaw's Perspective API models, which is possibly the most widely used hate speech detector (27). This novel hate speech measurement system allowed us to estimate the precise location of each tweet on the hate speech spectrum, where higher scores were more indicative of violent, racist language, and lower scores were indicative of benevolent race-related speech.

Results

Qualitative results

Table 2 provides the categories, themes, and illustrative tweets arising from the content analysis. The category and themes are described below. Qualitative themes that emerged included solidarity (4% before the shootings vs. 17% after), condemnation of the shootings (9% after), racism (10% before vs. 18% after), role of racist language during the pandemic (2 vs. 6%), intersectional vulnerabilities (4 vs. 6%), relationship between Asian and Black struggles against racism (5 vs. 7%), and discussions not related (74 vs. 37%).

Solidarity

Before the shootings: This category represented 4% of the sample and had three themes. *Affirmations* described positive compliments toward the Asian community. *Celebrations* highlighted excitement about events and people. *Call for action* tweets focused on imploring people to take a stand against attacks on Asian Americans.

After the shootings: This category represented 17% of the sample and had four themes. *Sympathy & support* described tweets of expressing sadness and “standing” with Asian Americans to offer reassurance. *Community collectiveness* were tweets that focused on solidarity through rallies and community-based resources. *Call for action* tweets focused on “calling out” hate and imploring people to take action to stop the violence. *Interpersonal support* was captured in tweets that gave specific ways to support Asian people in their personal network through supporting businesses, friends, and associates. News reports about the shootings were also captured in this section.

TABLE 1 Components of hate speech with their associated annotation prompts and labels.

No.	Component	Annotation prompt (abridged)	Labels
1	Sentiment	How would you describe the sentiment of this comment?	Strongly negative—strongly positive
2	Respect	Is this comment respectful toward the group(s) you previously identified?	Strongly disrespectful—strongly respectful
3	Insult	Comment is insulting toward the group(s) you previously identified.	Strongly disagree—strongly agree
4	Humiliate	Comment is humiliating toward the group(s) you previously identified.	Strongly disagree—strongly agree
5	Status	Comment states that the group(s) you previously identified is	Strongly inferior—strongly superior
6	Dehumanization	Dehumanizes the group(s) you previously identified (e.g., by comparing them to an animal)	Strongly disagree—strongly agree
7	Violence	Calls for using violence against the group(s) you previously identified	Strongly disagree—strongly agree
8	Genocide	Calls for the deliberate killing of a large group of people from the group(s) you previously identified.	Strongly disagree—strongly agree
9	Attack-defend	Attacking or defending the group(s) you previously identified	Strongly defending—strongly attacking
10	Hate speech benchmark	Contain hate speech, defined as bias-motivated, hostile, and malicious language targeted at a person/group because of their actual or perceived innate characteristics, especially when the group is unnecessarily labeled	Yes, no, unsure

Condemning shootings

Before the shootings: The theme of condemning the shootings was not applicable to this time period.

After the shootings: This category represented 9% of the sample and had three themes. The *hate crime* theme focused on the perceived targeted attacks on Asian women and the need for the crime to be labeled as a hate crime based on the event and not the shooter's expressed motives. The *grappling with personal emotions* theme captured the negative emotions (e.g., fear, sadness, anger) of Asian people and fear for Asian loved ones in the aftermath of the shootings. After the event, tweets reported *disgust in response toward the shootings*. Specifically, tweets reported anger toward the police officer who reported that the shooter was “having a bad day” at a press conference, distrust in media coverage, and disappointment in lack of response from some elected officials.

Racism

Before the shootings: This category represented 10% of the sample and had three themes. These tweets highlighted recent examples of *anti-Asian racism and attacks*. *Racist insults* described users who tweeted disparaging and offensive remarks about Asian people. In this period, *historic racism* captured the trauma and resulting fatigue of racism through the generations.

After the shootings: This category represented 18% of the sample and had four themes. In connection with the shooting violence, tweets highlighted other recent examples of *anti-Asian racism and attacks* through statistics and stories of Asian people being attacked. Tweets described the role of *white supremacy* as the “root cause” of racism and impacts other minoritized groups. *Downplaying racism against Asian people* described tweets that denied or belittled racism in this group and could potentially stifle action among Asian people. Tweets also described *historic racism* by reporting generations of discrimination against Asian people through stereotypes and government mistreatment.

Role of racist language during the pandemic

This theme represented 2% of the sample before and 6% of the sample after the shootings. These tweets discussed *role of*

racist language and its consequences during the pandemic. Several tweets discussed the stigmatizing language related to the COVID-19 pandemic in relation to people perceived as Chinese. Consequences described in the tweets included harassment and discrimination.

Intersectional vulnerabilities

Before the shootings: This category represented 4% of the sample and had two themes. Tweets about *intersectional racial violence* described the appalling attacks on elderly Asians, Asian women, and elderly Asian women. *Sexualization* described tweets that objectified Asian people.

After the shootings: This category represented 6% of the sample and had four themes including discussions of interracial violence observed before the shootings. After the shootings, Twitter users expressed *fear from intersectional identity* making them or someone they knew a target of violence. *Sexualization as racism* described tweets that identified the fetishizing of Asian people as a form of racism. Lastly, the shooter stated that he committed the shootings because he had a sex addiction, and the *sex addiction narrative* contested that explanation as a rationale for killing people.

Relationship between Asian and Black fight against racism

Before the shootings: This category represented 5% of the sample and had two themes. *Friction* described the conflict between Asian and Black people. *Multiracial observations* represented users' general observations about race through informing or providing their opinion, such as lack of representation on television.

After the shootings: This category represented 7% of the sample and had two themes. *Friction* described tweets that noted the antagonism between Asian and Black people, specifically pointing out the conflict and lack of support between these groups. In contrast, other tweets highlighted *calls for solidarity* between Asian and Black people. Both themes in this category highlighted the role of white supremacy in creating tension among races.

TABLE 2 Content analysis themes of tweets related to race/ethnicity before and after the Atlanta spa Shootings (with illustrative examples).

Before the shootings	After the shootings
Example tweets from time period 1—January 1 to March 15, 2021: $n = 1,000$ tweets	Example tweets from time period 2—March 17 to March 28, 2021: $n = 2,000$ tweets
Themes	
Solidarity	
4% of the sample ($n = 46$)	17% of the sample ($n = 339$)
–	Sympathy and support <ul style="list-style-type: none"> My beautiful Asian Americans, I'm so sorry. I stand with you.
–	Community collectiveness <ul style="list-style-type: none"> STOP ASIAN HATE rally early this morning here in San Francisco Downtown! All Asians unite, young and old—so amazing to see Asians united.
Affirmations <ul style="list-style-type: none"> The Chinese kinda rock 	–
Celebrations <ul style="list-style-type: none"> I heard that in support of the Asian community, folks was celebrating Chinese New Year last night downtown with some fireworks. 	–
Call for action <ul style="list-style-type: none"> Racist-fueled attacks on Asian American communities must end NOW! Spread positivity or I pray you run into the right one. 	Call for action <ul style="list-style-type: none"> The continued violence directed against the Asian American Pac Island community is vile and disgusting. We cannot allow ignorance and hate to continue to spread. Bigotry and xenophobia must be called out.
–	Interpersonal support <ul style="list-style-type: none"> I'm more than happy to accompany any of my Asian friends if they don't feel comfortable or don't feel safe going out by themselves to the store, wherever (this included rides to avoid public transportation my heart hurts so badly seeing innocent people being attacked like this)
Condemning shootings	
0% of the sample	9% ($n = 171$)
<ul style="list-style-type: none"> Not applicable 	Hate crime <ul style="list-style-type: none"> The murders of 6 Asian women is seen by many of us as a hate crime. I don't get that law enforcement doesn't see it the same way. Grappling with personal emotions <ul style="list-style-type: none"> Terrifying. We're really upset over here. Be extra gracious with Asian people right now, because we're not okay. Disgust in response toward the shootings (police, media, and government) <ul style="list-style-type: none"> The Asian women, and a white cop defends this murderer by saying he had a bad day? Excuse me?? #AsianLivesMatter #AsiansAreHuman #StopAsianHate #StopAsianHateCrimes
Racism	
10% ($n = 101$)	18% ($n = 366$)

(Continued)

TABLE 2 (Continued)

Before the shootings	After the shootings
Example tweets from time period 1—January 1 to March 15, 2021: $n = 1,000$ tweets	Example tweets from time period 2—March 17 to March 28, 2021: $n = 2,000$ tweets
Anti-Asian racism and attacks <ul style="list-style-type: none"> Racist man pepper sprays Asian gas station owner after telling him to "go to China" 	Anti-Asian racism and attacks <ul style="list-style-type: none"> A man ran full speed onto my train today because some dude was angrily yelling at the station. I couldn't even make out what he was yelling about, but the fact that the first man, who was Asian, felt so scared that this guy could attack him
Racist insults <ul style="list-style-type: none"> Must be where the Chinese handlers are staying. Like roaches, they come out in the dark. 	–
–	White supremacy <ul style="list-style-type: none"> @[NAMES] You don't have to be white to be a white supremacist. A lot of the groups subjugated by white colonizers have people in their societies that are white supremacist identifiers or white supremacist sympathizers. This applies to Black, Brown, and Asian people.
–	Downplaying racism against Asian people <ul style="list-style-type: none"> Being the "model minority" there is an invisible pressure that when an Asian person is murdered, we are not allowed to mourn and protest the injustice of it. We are told being immigrants that outrage and asking for anything more than what we have isn't our culture.
Historic racism <ul style="list-style-type: none"> Asian Americans have always dealt with the "forever foreigner" problem. I'm tired as well, but the next generation needs to change this for good 	Historic racism <ul style="list-style-type: none"> These hate crimes have not started because of increased media attention. This sh*t has been going on for years. Due to anti-Asian stereotypes there are a lot of Americans, some I know personally that are scared of eating out of any Asian restaurants because of the long-running [stereotypes]
Language	
2% ($n = 18$)	6% ($n = 112$)
Role of racist language and its consequences during the pandemic <ul style="list-style-type: none"> My son's gf is half Chinese and when COVID first hit, she got harassed at the grocery store 1 day with her mom and little sisters. Some as*hole threw a bottle of cleaner at them and ran away screaming "China virus they brought the China virus!" Just god awful. 	Role of racist language and its consequences during the pandemic <ul style="list-style-type: none"> This isn't fair!! This was obviously a hate crime targeting Asians & Pacific Islanders because they feel emboldened from racist, xenophobic rhetoric they absorb from right-wing media to promote fear-mongering, racism & division to the community. #StopAsianHate #StopAAPIHate
–	Defending the rhetoric <ul style="list-style-type: none"> I'm sorry! some people don't do logic—like that there's a difference between China, the place, the Chinese government and Chinese people in or out of China (let alone throwing in other Asians) but the virus IS from China

(Continued)

TABLE 2 (Continued)

Before the shootings	After the shootings
Example tweets from time period 1—January 1 to March 15, 2021: $n = 1,000$ tweets	Example tweets from time period 2—March 17 to March 28, 2021: $n = 2,000$ tweets
Intersectional vulnerabilities	
4% ($n = 39$)	6% ($n = 126$)
Intersectional racial violence <ul style="list-style-type: none"> I'm so sick of this sh*t. People who's attacking the elderly Asians are soft as hell. Weak! Just plain disgusting POS that would do this. 	Intersectional racial violence <ul style="list-style-type: none"> It's not just violence against Asian Americans. It's violence against the weakest Asian Americans. It's the elderly. It's women. It's the poor and marginalized. It's infuriating.
–	Fear from intersectional identity <ul style="list-style-type: none"> I now feel more and more scared to be alone outside as an Asian woman. This shouldn't be a feeling I feel or any woman of any color should feel.
Sexualization <ul style="list-style-type: none"> Hi guys! Good mood! Have fun f*cking! #asian #asianwomen #fetishmodel #asianbabe 	–
–	Sexualization as racism <ul style="list-style-type: none"> idk who needs to hear this: fetishizing Asian people *is* racism.
–	Sex addiction narrative <ul style="list-style-type: none"> Premeditated murder. You have a sex addiction so you kill Asian women. That doesn't hold water
Relationship between Asian and Black fight against racism	
5% ($n = 53$)	7% ($n = 141$)
Friction <ul style="list-style-type: none"> Using the rise in Asian hate crimes as an excuse to be anti-black is still racism bud 	Friction <ul style="list-style-type: none"> Just saying this... where are all the Asians screaming BLM Not noticed it's Blacks doing most of the attacking on Asian People? Screw BLM!! This stop Asian hate propaganda is a counter movement to overshadow Black American issues America wants to bury and silence. If Black people hate Asians so much we wouldn't be their largest consumer base.
–	Calls for solidarity <ul style="list-style-type: none"> We can support Black Lives Matter and support our Asian brothers and sisters as they deal with anti-Asian violence. Be against White supremacy, for equality. Don't stand by. Stand up. Read my take at @[NAMES]
Multiracial observations <ul style="list-style-type: none"> I would love to see a multiracial family show that's Black and Indian or Black and Hispanic or Black & Asian because TBH that's more prevalent than the Black & White family. 	–

Common discussions refer to tweets not relevant to the topic. Before the shootings, 74% of the sample ($n = 743$) were in this category. After the shootings, 37% of the sample ($n = 745$ tweets) were in this category. Most tweets in this category referred to appreciating Asian food, providing information and opinions about politics, and perspectives of popular culture related to media and entertainment.

Common discussions (tweets not relevant to the topic)

In both time periods, this category represented the majority of tweets: 74% of the sample before the shootings, and 37% of the sample after the shootings. These tweets were not related to the Atlanta spa shootings or topics influencing the narrative about attacks on Asians. Most of the tweets focused on appreciating Asian food, political opinions, and perspectives of popular culture and entertainment.

Quantitative results

Overall, the quantitative data showed a temporary increase in solidarity speech toward Asians after the Atlanta spa shooting. The top panel of Figure 1 shows the estimated rates of racism-related and solidarity tweets from January to April of 2021; the bottom panel shows the volume of tweets. The dark purple and dark blue lines show anti-Asian tweets and anti-Black tweets, respectively; these did not change noticeably across time. However, there were strong period effects for Asian solidarity and Black solidarity. The light purple line shows a 20% increase in solidarity-related tweets for Asians after the Atlanta spa shootings, from 22.7% 7 days before the shooting to 27.2% 3 days after ($p < 0.001$) (Figure 1). Within about 2 weeks, the increase in solidarity messaging returned to its earlier rate of ~20%.

For comparison, the study examined how hate and solidarity speech compared with another racial group with national race-related events. Specifically, we examined tweets with Black keywords; there were no detectable changes in solidarity-related sentiment following the Atlanta spa shootings. However, changes in Black solidarity speech were found with events related to the Biden/Harris presidential inauguration in January, the beginning of Black History month in February, and the announcement of Derek Chauvin's trial verdict on April 20. We identified no strong changes to rates of racism in tweets with Asian or Black keywords, but did find that tweets with Black keywords had higher rates of estimated racism compared to Asian keywords over the study period. Changes in tweet volume (lower subplot) were consistent with these findings, and further identified a spike in tweet volume during and immediately after the January 6 attack on the US Capitol.

In addition to the overall score, we examined trends in the individual components of hate speech (Table 1), with a focus on tweets containing Asian keywords (Figure 2). Around the Atlanta spa shooting, we identified a decrease in language that attacked Asians, a reduction in insults, an increase in negative sentiment tweets, and a very large but temporary increase in tweet volume lasting about 1 week.

We also evaluated hate speech score across selected themes identified from the qualitative content analysis for the period after the Atlanta spa shootings (Table 3). Tweets within the "solidarity" theme had the lowest average hate score, indicating that the model predicted those tweets to be in the supportive speech range of hate score (scores lower than -3). Other themes spanned the neutral range of the hate score (-1.5 to -0.5) and the positive speech or counter speech range (-3 to -1.5). The "Role of Racist Language" theme had the lowest average sentiment, indicating more negative sentiment, as well as more hateful average ratings on attack-defend, respect, and insult components.

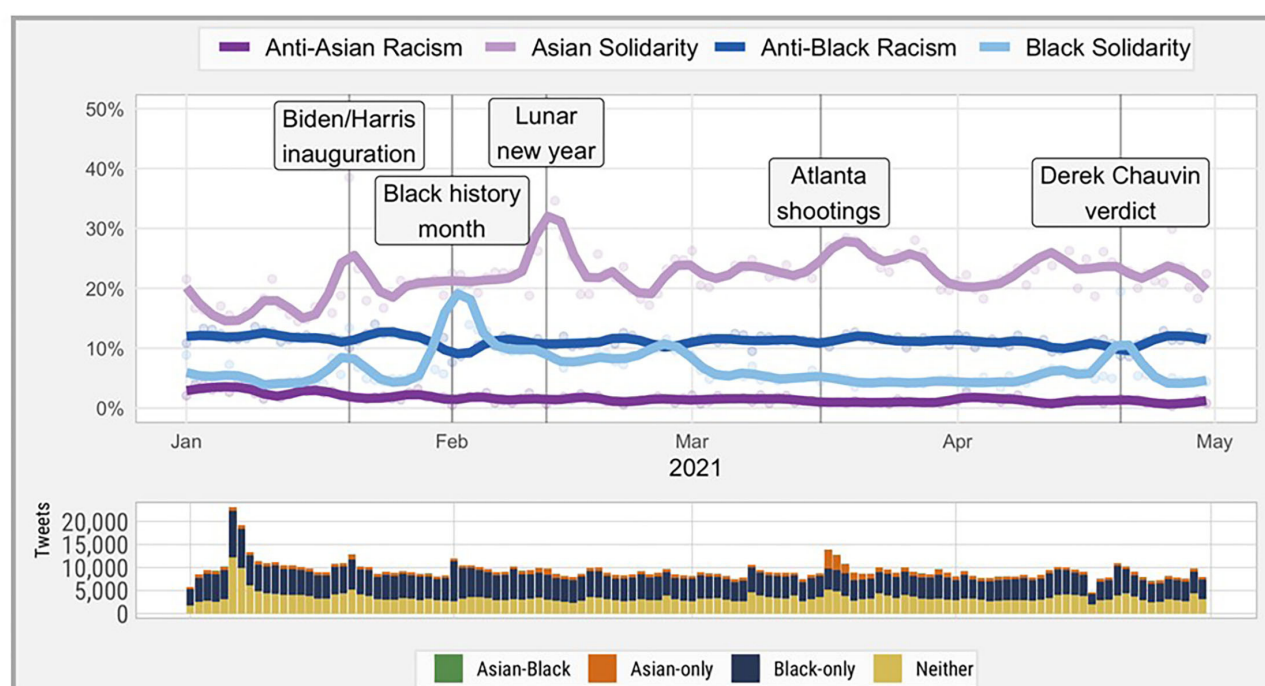


FIGURE 1

Impactful events, estimated rates of racism-related and solidarity messages on Twitter, and tweet volume January to April 2021, stratified by tweets containing Asian and Black keywords. Asian-Black denotes that tweets include both Asian and Black keywords. Solidarity speech was defined as hate speech scores < -3 and racist speech was defined as hate speech scores > 0.5 .

TABLE 3 Comparison of the average hate speech score and average predicted ratings of key components after the Atlanta spa shootings (item rating range in parentheses) across themes, with chi-squared test of item rating variation across themes.

Theme	Average hate score (SD)	Hate score (IQR)	Sentiment (SD)	Attack-defend (SD)	Respect (SD)	Insult (SD)
Solidarity	-3.73 (1.03)	-4.5, -3.1	0.90 (1.10)	0.17 (0.43)	0.56 (0.86)	0.06 (0.30)
Condemn shootings	-1.86 (1.01)	-2.4, -1.2	2.74 (0.94)	0.67 (0.78)	2.00 (0.87)	0.53 (0.80)
Racism	-1.88 (0.90)	-2.4, -1.3	2.70 (0.77)	0.83 (0.76)	2.17 (0.84)	0.67 (0.86)
Language	-1.56 (0.97)	-2.1, -1	2.94 (0.75)	0.78 (0.89)	2.18 (0.93)	0.68 (0.89)
Intersectional	-1.90 (0.99)	-2.5, -1.3	2.60 (0.85)	0.62 (0.74)	2.01 (0.90)	0.55 (0.84)
Asian-Black	-1.95 (1.10)	-2.7, -1.1	2.56 (0.99)	0.81 (0.81)	2.01 (1.00)	0.73 (0.91)
Unrelated	-2.38 (1.15)	-3.1, -1.6	1.85 (1.06)	1.03 (0.44)	1.80 (1.05)	0.66 (0.80)
P-value			< 0.0001	< 0.0001	< 0.0001	< 0.0001

The possible values for the components of hate speech are 0–4 for the sentiment and respect items, and 0–3 for the attack-defend and insult items. This variation is due to combining response options based on fit statistics from the item response theory analysis, as reported in Kennedy et al. (24). Lower values indicate less hateful communication on that aspect of speech, while higher values indicate more hateful communication. See [Supplementary Table 1](#) for examples of tweets at each end of a component's possible ratings.

Discussion

This study leveraged data from Twitter and employed a mixed-methods approach to interrogate public discourse about race, racism, and solidarity following the tragic Atlanta spa shootings. The use of both quantitative and qualitative data maximized the breadth and

depth of our analysis beyond what could be achieved using each approach alone.

Themes that emerged during the qualitative content analysis largely mirrored those identified by the machine learning hate speech model. After the Atlanta spa shootings, there was a spike in negative sentiment tweets. The qualitative analysis revealed this increase was

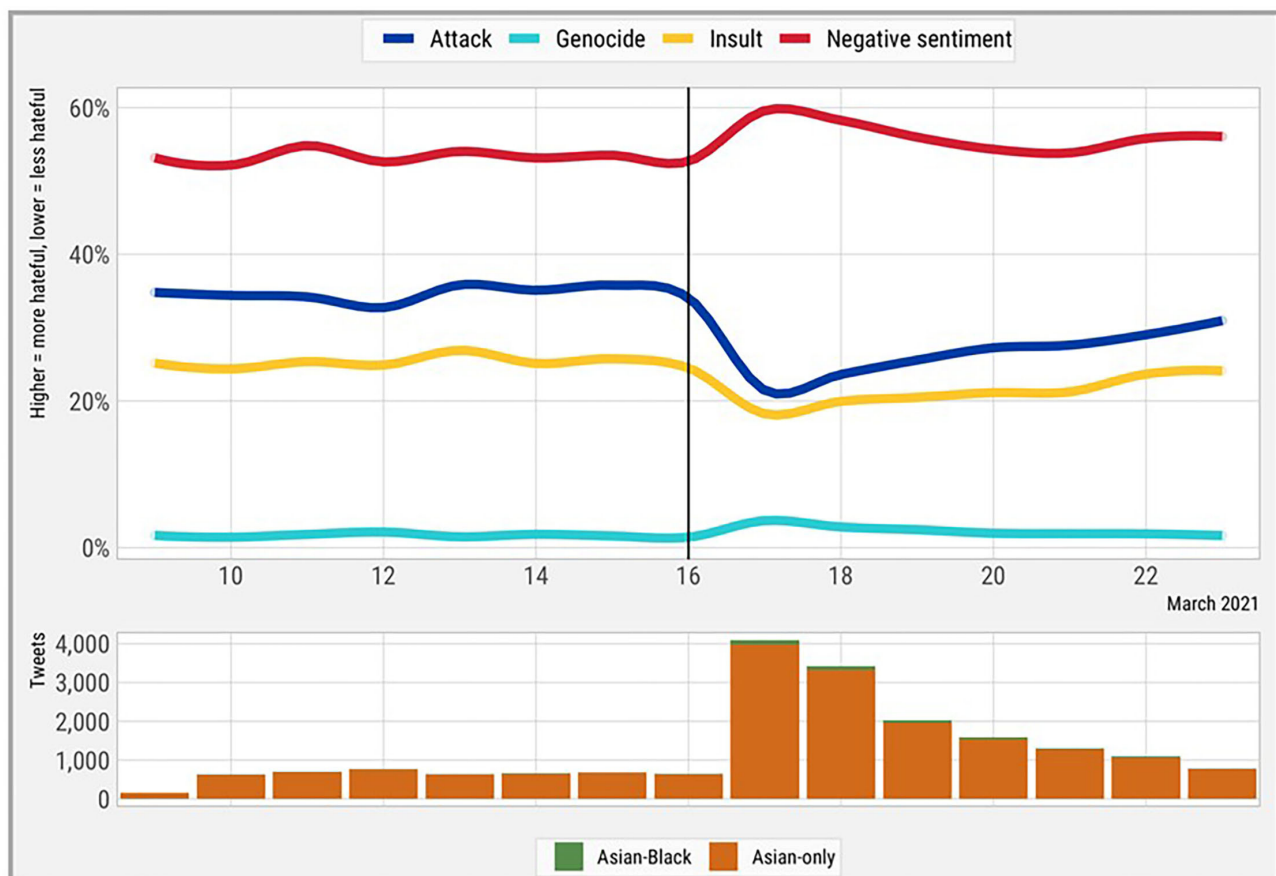


FIGURE 2
Longitudinal impacts of the Atlanta spa shooting on personal attacks, genocidal language, insults, and negative sentiment in Asian-keyword tweets.

mostly driven by the theme of condemning the shootings, and not anti-Asian rhetoric. These tweets expressed anger and frustration and exuded an overall negative tone. The quantitative findings also revealed a rise in solidarity speech, and this was consistent with that qualitative theme which became more prominent after the Atlanta spa shootings. Our study highlights the importance of utilizing a mixed methods approach.

Prior to and after the Atlanta spa shootings, we observed discussions about the intersections of racism and sexism experienced among Asian and Asian American women. After the shootings, we observed concerns expressed for the safety of Asian and Asian American women, based on their racial/ethnic and gender identities. These themes can be understood within the context of intersectionality theory. Intersectionality describes how multiple social identities converge at the individual-level to reflect multiple interlocking systems of oppression at the societal-level (28). Central to this theory is a recognition that individuals may be placed at heightened risk of discrimination and violence based on their membership in multiple structurally marginalized groups (e.g., race and gender). Scholars have extended intersectionality theory to describe the unique forms of racialized sexism and sexualized racism experienced by women of Asian descent. This form of intersectional vulnerability stems from a long history of sexual racial stereotyping of Asian women as “exotic geishas” or “sexually

submissive,” among other harmful tropes (29). These stereotypes may lead to verbal, physical, and sexual violence committed against Asian American women (29). Set against this backdrop, our findings suggest that the Atlanta spa shootings exacerbated feelings of fear and anxiety among Asian American women and their loved ones.

Age is another identity that shapes people’s lived experiences based on its intersections with race and gender, reflecting broader societal intersections of ageism, racism, and sexism (30). Indeed, several of the victims of the shooting were in their 60s and 70s, hate crimes against Asian American elders have received national attention (31), and many of the tweets in our analysis expressed concern for the safety of older Asian American women. This finding underscores the need to take a broad intersectional approach to better understand vulnerabilities individuals face based upon membership in multiple marginalized social categories.

The recent anti-Asian racism and attacks should not be seen as random or even unique to this pandemic, but rather as part of a long history of racialization and violence against Asians (4). Much of the research on this topic emphasizes the role of political and educational institutions, news, and media in perpetuating anti-Asian racism and violence (32). Several tweets in our study addressed the downplaying of racism against Asian people, including being silenced or a denial of the existence of anti-Asian racism. The model minority myth plays a

key role. Its portrayal of all Asians as a successful monolith provides reason to ignore Asian American protests about discrimination and racial inequalities, and often renders them invisible in discussions of race and racism (33).

Our data suggest the importance of national support for the Asian American community. Tweets condemning racism have increased under the hashtag #StopAAPIHate (34). Previous research shows that solidarity through hashtags and counterhate messaging on social media is associated with decreases in hate speech across social media platforms (22). The Atlanta spa shootings catalyzed an increase in national awareness of racist messaging and Asian hate crimes in America and sparked national use of counterhate messaging to support the Asian American community.

Even with this renewed support of the Asian American community, our study found that tweets discussed the friction between Asian and Black people before and after the Atlanta spa shootings. Before the incident, the rise in Asian hate crimes seemed to be the impetus for Twitter users engaging in discussions about anti-Blackness. After the incident, there were specific debates about the lack of support from Asians for BLM, continued discussion of Black perpetrators attacking Asians, and the role of white supremacy in this overall tension. Within the manufactured racial hierarchy in the model-minority myth, white supremacy works to pit Asian and Black people against each other in a competition for resources (35) and introduces questions of merit and favor by who “belongs” more in the US (36).

As a powerful counter to the friction narrative, there were also calls for solidarity between Asian and Black communities. Previous research has emphasized the importance of contact as a tool to build intergroup empathy and action (37). Discussions on Twitter may help facilitate contact regardless of distance. Research has found that the most effective multiracial collaborations share several key characteristics: an ability to set aside narrow race-based politics and focus on larger issues, strong relationships between individuals and organizations, and the mobilization of the resources and communities of ethnic-specific organizations (38). Our study demonstrates social media as a platform where people actively express anti-racist sentiments through calls for solidarity and condemnation of white supremacy.

Conclusion

Our study has several limitations. Twitter data represent what people are willing to express online. This expression may differ from in-person interactions and discussions. Future work can examine the extent to which Twitter-expressed solidarity is associated with community collective action and policymaking. In our content analysis, our research focused on the Atlanta spa shootings specifically, and future research can examine the broader topic of condemning racial violence. Compared to the general adult population in the US, adult Twitter users are younger and more educated (39), so the results may not be generalizable to the US adult population as a whole. Discussions related to race and racism vary by socio-demographics characteristics. For example, greater education is associated with more egalitarian racial attitudes (40). In addition, discussions related to race and racism may vary by online

platform. More extreme views may be expressed in other platforms (e.g., Reddit, 4Chan). Tweets are limited to 280 characters, precluding more nuanced discussions.

This study has several strengths. It uses temporal data and mixed methods to examine a racialized event, the 2021 Atlanta spa shootings. This is the first application of the newly developed hate speech model to examine a specific event. Due to its foundation in item response theory, the measurement technology could assess social media speech in a comprehensive manner, with built-in correction for annotator bias, and place messages on a continuous spectrum of severity ranging from extreme hate speech to supportive solidarity speech.

Future research could investigate how conversational trends on Twitter were reflected in change in policies and practices. Future research could also investigate whether machine learning models can predict race-related hate crimes based on rising trends of hate speech on Twitter. Our analysis highlights some of the complexities of discrimination including that based on intersectional identities, the unique and shared struggles experienced by Black and Asian Americans, and the importance of nuanced evaluation of online speech. By understanding the conversations emerging from social media, we may learn about possible ways to produce solidarity promoting messages and dampen hate messages.

Data availability statement

Twitter data were collected using Twitter's Application Programming Interface (API). Twitter's API is free and open to the public. Further inquiries can be directed to the corresponding author/s.

Author contributions

SC, TN, EM, GG, CK, and QN contributed to the conception and design of the study. SC, TN, CK, SN, ET, LN, IY, MK, NT, and AS contributed to the data analysis and interpretation. SC, TN, and CK drafted the manuscript. GG, QN, and MVK contributed to the input, review, analysis, and editing. All authors critically reviewed the manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2023.952069/full#supplementary-material>

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The impact of anti-Asian racism on routine activities and mental health among Korean American older adults and their caregivers

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Introduction: Reported anti-Asian discrimination has been on the rise since the COVID-19 pandemic. Nevertheless, limited research addresses the health impact of perceived anti-Asian racism on Asian Americans, especially among older adults, during COVID-19. To address the gap, we examined how the novel coronavirus pandemic affected Korean American older adults, one of the largest Asian subgroups. Specifically, this study addressed the magnitude of racism or discrimination related to the pandemic and impact of anti-Asian racism on negative mental health symptoms among Korean American older adults and their caregivers.

Methods: We used survey data collected from 175 Korean American older adults with probable dementia and their primary caregivers (female = 62%, mean age = 71 years) who went through eligibility screening for an ongoing randomized controlled trial involving dyads in the Baltimore-Washington and the New York Metropolitan areas ([ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT03909347) Identifier: NCT03909347).

Results: Nearly a quarter of the survey sample reported they were fearful for their safety due to anti-Asian racism related to the pandemic. Additionally, 47% of the respondents indicated changes to routine activities due to anti-Asian racism or discrimination related to COVID-19. The most common changes included avoiding walking alone or physical activities outside, followed by avoiding public transportation or leaving the house to go to any public places such as grocery stores, churches, or schools, not carrying out usual social activities, and avoiding going to health care appointments. Multinomial logistic regression revealed that people who reported changes to routine activities were at least five times more likely (adjusted odds ratio = 5.017, 95% confidence interval = 1.503, 16.748) to report negative mental health symptoms than those who did not. Being fearful for their own safety was not associated with experiencing negative mental health symptoms in the survey sample.

Discussion: Study findings indicate that the increased reporting of anti-Asian racism during the COVID-19 pandemic has substantially affected Korean American older adults and their caregivers. The mechanism by which changes to routine activities is related to negative mental health symptoms is unclear, future research is needed to elucidate this pathway. Furthermore, our findings highlight the importance of identifying multi-level strategies to raise awareness of and to mitigate the reported surge of racism.

KEYWORDS

anti-Asian racism, mental health, Korean American, older adults, caregiver

Introduction

Anti-Asian discriminatory incidences encompassing verbal harassment, shunning (or deliberate avoidance), physical assault, and civil rights violations (e.g., refusal of service, workplace discrimination) have been on the rise since the Coronavirus disease 2019 (COVID-19) pandemic, with women reporting more hate incidents than men (1, 2). President Joe Biden signed the COVID-19 Hate Crimes Act in May 2021 (3). This was legislation to expedite the United States Justice Department reviews of anti-Asian hate crimes by making the reporting of hate crimes more accessible while ensuring reporting resources (3). Nevertheless, the aggregated reports by STOP AAPI Hate, the first ever attempt to systematically capture anti-Asian discrimination and xenophobia, by the Asian Pacific Policy and Planning Council showed more than 9,000 racially motivated attacks related to COVID-19 during March 2020–June 2021 (4).

Evidence supports the link between racism and negative health consequences, particularly among people of color (5). For example, the relative risk of COVID-19 death in the early pandemic was more than 10 times higher for Black and Hispanic/Latinx individuals younger than 50 years old compared to age-matched Whites in Illinois, attributable to limited access to healthcare and overall poorer population health resulting from structural racism (6). Despite the latest iteration of anti-Asian racism fueled by COVID-19, research addressing its impact on Asian Americans has been limited.

Available studies related to anti-Asian racism during COVID-19 examined adjustment and mental health problems among Chinese adolescents and their parents (7), affective reactions (e.g., fear, anxiety, depression, and avoidance) among Asian and non-Asian young adults (8), workplace experiences among Asian and non-Asian employees (9), race-based stress reported by news media coverage on COVID-19 related anti-Asian incidents or sentiments (10), racism-related social media use and depression among Asian Americans (11), or symptoms of depression and anxiety among young and middle-aged Asian Americans (12). None examined the impact of racism on older Asian Americans when, in fact, Asian Americans aged 45+ years had higher COVID-19 attributable mortality compared to non-Hispanic Whites (13, 14).

To address the gap in the literature, we conducted a survey and investigated how the COVID-19 pandemic was affecting Korean American lives. Korean Americans are the fifth largest subgroup among Asian Americans who are the fastest-growing racial group in the United States (15, 16). This study specifically examined the magnitude of racism or discrimination related to COVID-19 experienced by Korean Americans and how anti-Asian racism was associated with mental health among Korean American older adults and their caregivers.

Materials and methods

Design and sample

This was a secondary analysis of COVID-19 survey data collected from potential participants undergoing eligibility

screening for an ongoing community-based randomized controlled trial—PLAN: Dementia Literacy Education and Navigation for Korean Elders with Probable Dementia and Their Caregivers ([ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT03909347) Identifier: NCT03909347). Briefly, the primary goal of the PLAN trial is to test the effectiveness of the intervention, which consists of dementia literacy education and phone counseling with navigation assistance delivered by trained community health workers, on linkage to care for formal dementia evaluation among Korean American older adults with probable dementia.

The PLAN trial sample is dyad-based and consists of both Korean American older adults with probable dementia and their caregivers. Eligibility criteria for older adults include: (1) self-identified as first-generation Korean American; (2) ages 65 years or older; (3) Clinical Dementia Rating (CDR) 1.0+; (4) has a caregiver who lives in the same household or has at least weekly interactions; (5) resides in either the greater Baltimore–Washington metropolitan (i.e., Maryland, District of Columbia, and Northern Virginia) or the New York metropolitan areas (New York and New Jersey); and (6) able to consent or has a proxy available for consent. For caregivers, eligibility criteria include: (1) age 18 years or older; and (2) able to read and speak Korean.

The PLAN trial has two screening phases: (1) Mini-Mental Status Exam (MMSE) and (2) CDR. Once the first phase screening meets the pre-established criterion ($MMSE < 24$), the dyad is invited to a CDR interview. The COVID-19 survey was conducted for Korean American older adults who scored 24 or higher on the MMSE (i.e., normal cognitive function). For the older adults whose MMSE score was < 24 , his/her caregiver was asked to participate in the COVID-19 survey. The study team approached 505 Korean American older adults and their caregivers. Among them, 220 (44%) agreed to participate and were scheduled for the COVID-19 survey; 45 were unable to participate. As a result, a total of 175 participants completed the study survey (85% older adults and 15% caregivers).

Procedures

All study procedures were approved by the Johns Hopkins Medicine Institutional Review Board. COVID-19 survey data were collected between March and October 2021. Trained bilingual research staff collected survey responses mostly *via* phone which took on average about 20 min. Additional data collection methods involved sharing a link to an online survey through email or text (11 surveys or 6% of total surveys completed). These data collection methods coincided with COVID-related restrictions during the survey period. All data collection was done in Korean. No remuneration for participation was offered for this optional survey. Every participant provided verbal consent before completing the COVID-19 survey.

Instrumentation

The study team developed the survey to better understand the impact of COVID-19 on Korean Americans' physical, emotional,

and mental health. The 51-item survey also included questions about possible exposure to the virus, experiences with testing and treatment, and how one's life has changed as a result of COVID-19. In addition to sociodemographic questions such as age, sex, education, living arrangement, use of internet, use of social media, and study sites, key study variables included fear for safety (*"Are you fearful for your safety because of racism or discrimination related to COVID-19?"*), changes to routine activities (*"Have you changed any of the following activities because of potential racism or discrimination related to COVID-19?"*), and Mental Health Impacts (MHI).

In particular, the MHI was adapted from the General Anxiety Disorder-7, Center for Epidemiological Studies Depression Scale, and the Impact to Event Scale-Revised and included items addressing nervousness, feeling depressed, feeling lonely, or having physical reactions when thinking about the experience with COVID-19 on a 4-point Likert scale (1 = Not at all or <1 day a week to 4 = 5–7 days a week). An example question included, "Have you felt nervous, anxious, or on edge?" Higher scores indicated more frequent negative mental health symptoms, with an internal consistency reliability coefficient of 0.77 in the survey sample.

Analysis

Data analysis was conducted in SPSS version 27. We used descriptive statistics such as means, standard deviations, frequencies, and percentages to summarize survey sample characteristics, while also addressing the prevalence of fear for safety and changes to routine activities related to potential racism or discrimination related to COVID-19. The Kolmogorov-Smirnov normality test indicated that the mental health data were not normally distributed ($p < 0.001$). We therefore created three groups addressing low, middle, and high negative mental health symptoms based on MHI scores across four items: 4 or lower (i.e., experiencing mental health symptoms none or <1 day a week), 5–8 (experiencing mental health symptoms 1–2 days a week), and 9 or higher (experiencing mental health symptoms 3 or more days a week), respectively. We then performed a multinomial logistic regression to examine the association between fear for safety and changes to routine activities related to racism during COVID-19, and negative mental health symptoms. For the regression, we estimated adjusted odds ratio (aOR) and the respective 95% confidence intervals (CI). Statistical significance was determined at $p \leq 0.05$ for all tests.

Results

Sample characteristics

Table 1 presents the descriptive characteristics of the survey sample. The sample were mostly in their 70s (mean = 71 years), female (62%), and highly educated (mean = 15 years of education). The majority of survey respondents resided in an individual home setting such as a single home, condo, or townhouse (70%). More than half (55%) of respondents were from the Baltimore-Washington metropolitan area. When asked about

TABLE 1 Survey sample characteristics ($N = 175$).

Variable	Mean (SD) or %
Age (range = 40–90), years	71 (8)
Female	62
Education (range = 4–23), years	15 (3)
Live in single home/condo/townhouse	70
Reside in Baltimore-Washington [†]	55
Use internet fairly often/very often	71
Use social networking service (SNS) fairly often/very often	21
Fearful for safety due to racism	23
Changed routine activities due to racism	47
Mental health impacts (range = 4–15)	
Low [4 or less (not at all or <1 day/week)]	45
Middle [5–8 (1–2 days/week)]	41
High [9 or higher (3 or more days/week)]	14

[†]Study participants were recruited from either Baltimore-Washington or New York Metropolitan areas.

the use of internet and social network services (SNS), more than two thirds said they used internet fairly often or very often (71%), whereas only about one of five said they used SNS fairly often or very often (21%). As for racism or discrimination related to COVID-19, nearly a quarter of the respondents (24%) reported that they were fearful for their safety, and 47% indicated that they made changes to their routine activities. With respect to MHI, more than half of the survey sample reported that they experienced negative mental health symptoms 1–2 days/week (41%) or 3+ days/week (14%), whereas 45% of them had no or minimal (<1 day/week) symptoms in the past week.

Changes to routine activities due to racism or discrimination related to COVID-19

Table 2 presents the most common changes to routine activities due to racism or discrimination related to COVID-19. Of those who endorsed any changes to routine activities ($n = 83$), avoiding walking alone or physical activities outside was most frequently reported (73%), followed by avoiding public transportation (42%) or leaving the house to go to any public places such as grocery stores, churches, or schools (41%), not carrying out usual social activities (33%), and avoiding going to health care appointments (4%).

Associations of racism related fear and changes to routine activities with mental health

Table 3 summarizes findings from the multinomial logistic regression models adjusted for age. Specifically, those who reported

TABLE 2 Changes to routine activities due to racism related to COVID-19.

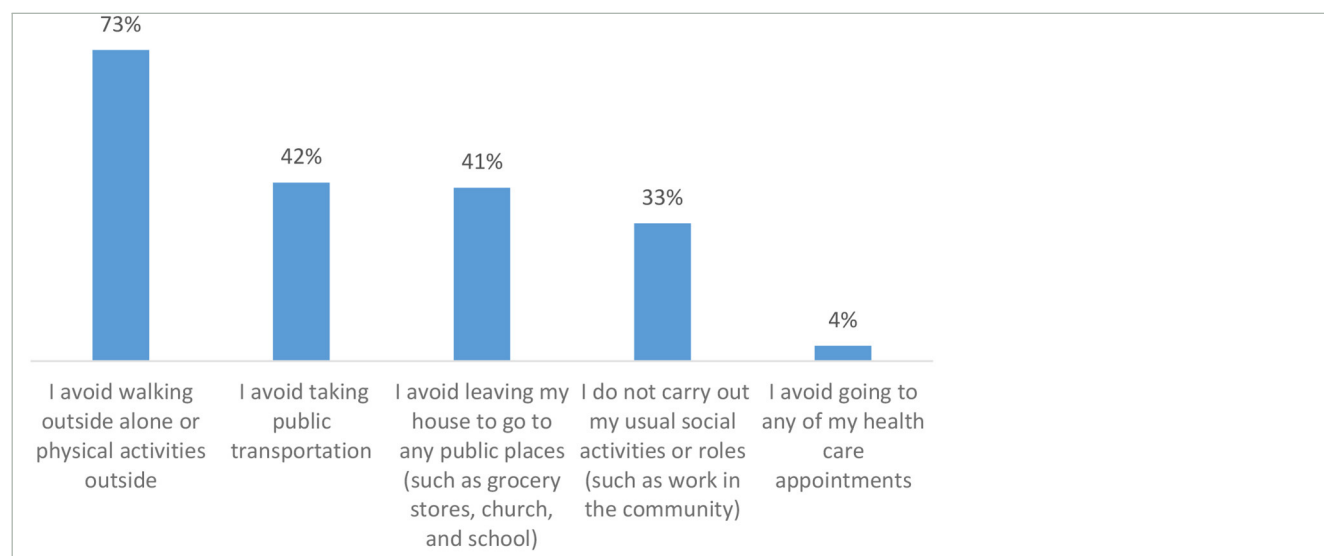


TABLE 3 Results from multinomial logistic regression models.

	Middle MHI group			High MHI group		
	aOR	95% CI		aOR	95% CI	
		Lower	Upper		Lower	Upper
Age	0.965	0.918	1.015	0.954	0.885	1.028
Male	0.801	0.395	1.626	0.429	0.120	1.530
Low education	1.259	0.530	2.990	4.369*	1.303	14.652
Residence in single home/condo/townhome	0.504	0.239	1.065	1.131	0.353	3.620
Greater Washington area	1.049	0.508	2.168	0.885	0.289	2.527
Little/no use of internet	1.050	0.468	2.356	1.364	0.423	4.405
Little/no use of SNS	1.514	0.624	3.674	1.848	0.444	7.693
Fearful for safety	0.596	0.242	1.467	1.591	0.517	4.898
Changed daily activities	1.265	0.615	2.604	5.017**	1.503	16.748

The reference categories for this analysis were: low MHI group, female, high education (some college+), residence in apartment, individuals in New York area, frequent use of internet, frequent use of SNS, no fear for safety, and no change in daily activities; models were adjusted for age. * $p < 0.05$, ** $p < 0.01$.

changes to routine activities due to COVID-19 related anti-Asian racism or discrimination had at least five times higher odds of reporting most frequent negative mental health symptoms than those who did not report any change (aOR = 5.017; 95% CI = 1.503, 16.748). Additionally, the odds of a person whose education level was high school or less being included in the high MHI scored group compared to the low MHI scored group was slightly more than four times higher than a person with some college or more education (aOR = 4.369; 95% CI = 1.303, 14.652). Having fear for safety related to anti-Asian racism was not significantly associated with mental health.

Discussion

Despite unequal burden of COVID-19 among Asian Americans coupled with ongoing anti-Asian racism related to COVID-19, research that investigates the impact of racism on older Asian

Americans is scarce. This study investigated the impact of racism during COVID-19 and the relationship between anti-Asian racism and mental health among Korean Americans. The results revealed that racism against Asian Americans related to COVID-19 substantially affected Korean American older adults and their caregivers in the survey sample, with nearly half of them reporting changes in routine activities related to anti-Asian racism. Further, those who reported changes in routine activities had significantly increased odds of experiencing frequent negative mental health symptoms, suggesting the link between mental health and racism or discrimination related to COVID-19.

Our main finding of the significant association between changes in routine activities related to racism and negative mental health symptoms is consistent with the results reported in prior research involving people of color. Harmful effects of racism have been documented in a non-COVID-19 specific context with evidence supporting associated negative mental health outcomes. For example, a systematic review of studies involving Black American

older adults (50+ years) revealed that racism was significantly associated with depressive symptoms, psychological distress, or anxiety in fourteen out of fifteen studies in which mental health measures were included (17). Another systematic review included longitudinal exposure of racial discrimination among children and found significant associations between accumulated racial discrimination and adverse health outcomes (e.g., substance use, risky sex behavior, disrupted cortisol slopes similar to traumatic stress) (18). Taken together, these findings indicate the significant negative impact of racism on health across the lifespan.

It is not completely clear why Korean Americans with changes in routine activities had more frequent negative mental health symptoms than those without. It might be that some of the changes caused by anti-Asian racism (e.g., avoiding usual social activities) aggravated the already substantially increased level of loneliness among older adults during the COVID-19 pandemic; loneliness has been associated with a range of physical and mental health problems including major depression (19). Another possibility is internalized racism. Internalized racism (i.e., a belief that one's racial group is inferior to other racial groups) has been suggested as a potential pathway through which racism may cause emotional and physical harm to minoritized people, though largely targeted Black Americans (20–22). According to a recent survey of Asian and Latinxs college students, Asian students endorsed higher levels of internalized racism and perceived a change in everyday discrimination compared to Latinxs during the COVID-19 pandemic (23). Similarly, an online sample of Asian Americans (mean age = 39 years) revealed that indirect racism experienced through family or friend was linked to compromised sleep quality and duration but the adverse effects of racism experience were lessened among those who reported high levels of ethnic/racial identity (24). The findings suggest the need for research addressing the mechanism through which racism influences diverse health outcomes among Asian Americans.

It is concerning to note that avoiding public transportation or going to public places such as churches or grocery stores was frequently reported among the study participants. Transportation is a key social determinant of health which disproportionately affects the most vulnerable groups in our society who often carry the highest health disparity burden such as non-English speaking immigrant older adults including Korean Americans (25). Additionally, given the central role of faith-based organizations in immigrant communities as epicenters for social, religious, and health promotion activities, the challenges and impact of these changes in routine activities such as avoiding public transportation resulting from fear of anti-Asian racism and xenophobia may have been insurmountable (26). Future research must thoroughly describe a wide range of health impacts caused by changes to these routine activities related to the increased reports of and incidences of anti-Asian racism during the COVID-19 pandemic, while identifying possible solutions to challenge ongoing xenophobia. Some of the suggested methods include social advocacy as well as education and training of students, public health professionals, and health agencies (27). Additionally, a national online survey of US adults ($N = 1,141$) conducted in March 2020 (28) indicated individuals who reported being more fearful of COVID-19 and who reported more

misinformation about the virus and less trust in science had more negative attitudes toward Asians, suggesting the need for public awareness campaigns.

Limitations

We recruited survey participants among those who were approached for an ongoing intervention trial designed to link Korean American older adults aged 65+ years to medical services for formal dementia evaluation. Due to the nature of this parent trial, it is possible that those who responded to this survey had poorer overall health status. In addition, this was a convenience sample hence the findings should be interpreted with caution. For example, the COVID-19 survey was taken in the early phase of the COVID-19 pandemic using virtual methods; that is, all who signed up for eligibility screening for the parent study were those who were able to follow our instructions to download and/or use a virtual videoconferencing tool, Zoom. These were often highly educated individuals (mean years of education = 15 years). Nationally, among Asian American older adults 65+, 43% had a bachelor's degree or higher (16+ years of education) in 2020 (29). Relatedly, more than half of the survey sample were recruited from the Baltimore-Washington metropolitan area. At the national level, anti-Asian hate crimes seem to occur more frequently in some of the major metropolitan areas such as New York. While such crimes increased by 189% across the country during the first quarter of 2021 compared to that of 2020, New York City saw a 262% increase during the same period (30). A recent analysis using geo-located tweet messages across the United States also revealed that New York was included in the top 10 geographical clusters with a higher proportion of hateful tweets against Asians related to COVID-19 (31). Finally, this study used cross-sectional data and we are unable to determine the temporality or causal direction between anti-Asian racism and adverse mental health symptoms. With the current study design, we are also unable to differentiate the influence of racism against Asians on mental health from the influence of the COVID pandemic itself. Future research using longitudinal designs may help unpack the long-term impact of anti-Asian racism related to the COVID-19 pandemic on mental health outcomes.

Conclusion

This study showed that anti-Asian racism related to the COVID-19 pandemic was associated with Korean American older adults and their caregivers' change of routine activities. Such changes significantly affected Korean older adults, contributing to their experience of negative mental health symptoms. Though President Biden signed into law the COVID-19 Hate Crimes Act in May 2021, this is just a first step to recognizing anti-Asian racism as a national issue requiring expedited review, report, and response—however, there remains critical need for systems level changes (3). Asian Americans have experienced racism and xenophobia since the first wave of immigrants arrived to the United States in the mid-nineteenth century. Historically, anti-Asian hate crimes have been perpetuated by exclusionary and

oppressive policies (32). Such hate crimes have surged during the COVID-19 pandemic and have revealed the absence of concrete resources, funds, and action needed to curb the problem including but not limited to better data reporting, disaggregating data to highlight the lack of research, resources for Asian Americans and Korean American groups, and policy changes to integrate Asian American history/studies in our education systems. Addressing historical and structural challenges that engender anti-Asian racism and xenophobia is essential to directing our society to set its course toward a more racially just and equitable one.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Johns Hopkins Medicine IRB. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

Author contributions

H-RH originated the study, led the writing, and supervised the study. H-RH, DM, J-YY, JJ, HL, and SK contributed to the

acquisition, analysis, or interpretation of data. H-RH, DM, and J-YY drafted the manuscript, and all authors contributed to the critical revision of the manuscript. All authors approved the final version of the manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Intersectional discrimination and its impact on Asian American women's mental health: A mixed-methods scoping review

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Introduction: Gendered racism against Asian American women has become an increasing public health threat in recent years. Although *intersectional* discrimination (i.e., co-occurring race- and gender-based discrimination) against Asian American women is not new, research on this topic is lacking. The present scoping review sought to explore how Asian American women report experiences of intersectional discrimination through a systematic examination of the current literature. We included studies that *explicitly* or *implicitly* discuss intersectional discrimination. We also aimed to identify indicators of psychological wellbeing and coping associated with these experiences.

Methods: Following PRISMA Guidelines for Systematic Scoping Reviews, database searches were conducted for peer-reviewed articles. A total of 1,476 studies were title- and abstract-screened by two independent reviewers. Then, 148 articles were full-text screened for eligibility.

Results: A final sample of 23 studies was identified (15 qualitative and 8 quantitative). Only nine of the included studies explicitly used an intersectional framework. Results from qualitative studies revealed that Asian American women experience intersectional discrimination through fetishization, the ascription of passivity, invalidation through lack of representation and pervasive white beauty ideals, and workplace tokenization and scrutiny. Study findings suggested that Asian American women experience these forms of intersectional discrimination across multiple levels of influence (i.e., internalized, interpersonal, institutional, structural). Findings from both qualitative and quantitative studies also indicated how discrimination, whether explicitly or implicitly intersectional, contributes to adverse mental health outcomes such as body shame, disordered eating, depression, and suicidality. Studies also touched on common coping mechanisms employed by Asian American women when facing or anticipating discrimination, such as avoidance, shifting, proactive coping, and leaning on networks of support. There was a lack of studies using quantitative assessments of intersectional discrimination. Also, most studies did not include disaggregated data by ethnicity, age, sexual identity, religion, socioeconomic status, immigration status, or skin color, all of which are likely to shape their experiences.

Discussion: Our scoping review highlights how the marginalization of Asian American women is an urgent threat to their mental wellbeing. These findings are discussed to inform future research, interventions, and policy changes that prevent racialized and gendered violence against Asian American women.

KEYWORDS

Asian Americans, women, intersectionality, discrimination, gendered racism, mental health, systematic review

Introduction

The deleterious impact of discrimination on the mental health of Asian Americans is well-documented. Higher rates of racial discrimination are associated with increased psychological distress, depression, anxiety, alcohol-related problems, and suicidal ideation among Asian Americans (1–8). Much of the extant research on racism against Asian Americans examines the model minority myth, a common stereotype that characterizes Asian Americans as hardworking, non-political, smart, and invisible (9–11). The model minority myth also perpetuates the dangerous notion that Asian Americans are exempt from experiencing discrimination due to false assumptions of their ubiquitous educational and economic success (9). Another common trope is the perpetual foreigner stereotype. As forever foreigners, Asian Americans are treated like they are not American, often questioned about where they are from, and sometimes viewed as untrustworthy, foreign carriers of disease (9, 12). This “yellow peril” narrative has resurged in the United States (U.S.) since the COVID-19 pandemic (13), and Asian Americans have experienced heightened posttraumatic stress, depression, and anxiety as a result (14–16). Although the model minority myth and perpetual foreigner stereotype shape the experiences of all Asian Americans, research on these forms of racial discrimination often ignores the specific experiences of Asian American women.

Asian American women are burdened with confronting the multiplicative effect of sexism and racism. Sexism has also been found to predict poor mental health, such as depression, anxiety, distress, and disordered eating (17, 18). However, most research on discrimination among Asian American women focuses on race-based discrimination only. Further, most research on sexism has been done with white women, erasing how racism compounds gendered experiences for women of color. For women of color, including Asian American women, experiences of racial discrimination are inextricably tied to gender-based discrimination (19). The interaction of racism and sexism that is experienced by women of color is often known as racialized sexism or gendered racism (20), a form of *intersectional discrimination*.

The intersectionality framework suggests that systems of oppression and power are embedded and reinforced by one another, and the individual experience is shaped through the context of their multiple, interwoven identities (19, 21). In her civil rights legal scholarship, Kimberlé Crenshaw coined the term intersectionality to explicate how Black women's experiences are distinct, and often excluded from, conversations about feminism and anti-racism. Crenshaw has outlined distinctions between structural, political, and representational intersectionality. *Structural intersectionality* is defined as the way macro-level systems shape violence against women of color that is distinct from that of white women (22). *Political intersectionality* is demonstrated through meso-level anti-sexist and anti-racist movements that exclude and further marginalize women of color. For example, feminist movements prioritize the rights of white women and anti-racism often focuses on combatting the oppression of men of color. Thus, these frameworks have traditionally neglected the axis at which women of color exist. *Representational intersectionality* is the way women of color are portrayed, or left out, at

the micro-level. Among pioneering Black feminist activists and scholars, such as Sojourner Truth and the Combahee River Collective, intersectionality has driven the conversation on how simultaneously occurring and reinforcing systems of oppression (i.e., racism, classism, heterosexism) have shaped the experiences of Black women in the U.S. for centuries (23, 24). However, the intersectionality framework has only begun to penetrate scholarship within the social sciences (25). Most of the research on intersectional discrimination against Asian American women has been produced within the last decade, and the majority of this research does not utilize an explicit intersectional framework.

Intersectional discrimination against Asian American women is best understood through the history of U.S. imperialism. The positioning of Asian women in the U.S. has been shaped by the intersection of Orientalism and sexism that has pervaded American history for centuries. For example, the Page Law of 1875 legally banned women from China, Japan, or “any Oriental country” from immigrating to the U.S. due to stereotypes of all Asian women as sex workers who would lure white men into a life of sin (12). A few decades later, the War Bride Act of 1945 and the “non-quota immigrants” act of 1946 were implemented to allow Japanese, Korean, and Filipina women who had married American soldiers overseas to migrate to the U.S. (12). This demonstrates the shift from demonizing Asian women to finding them useful as comfort to white men. White sexual imperialism also influenced common cultural tropes to subjugate Asian American women in relation to white men. For example, the “*dragon lady*” (i.e., the hypersexual, deviant Asian temptress) and the “*lotus blossom baby*” or “*China doll*” (i.e., the desperate, hyperfeminine, and sexually servile Asian woman) are particularly prevalent (26–29). Disparaging Asian women to images of subservience and hypersexuality is not only represented in mainstream media but it permeates the pornography world. A content analysis found that Asian women are the most represented female victims within violent pornography and rape websites (30). The racialized sexual objectification of Asian women is reinforced by the alarming rates of sex trafficking of Asian women to the U.S. and contributes to the other types of racialized and gendered violence experienced by Asian American women, such as intimate partner violence and sexual assault (26, 28, 31–33). The murder of six Asian female massage parlor workers in Atlanta in 2021 was a devastating reminder that these intersectional stereotypes exist to empower white men to “eliminate the temptation” of Asian women's bodies (26).

It is critical to acknowledge that discrimination against Asian American women emerges along multiple, simultaneously occurring levels of influence. *Structural* discrimination manifests through macro-level laws, policies, and practices that exclude and subordinate marginalized communities (34). For example, Chinese elders in the New York City metropolitan area experience disproportionately high rates of poverty in comparison to other elders, which is perpetuated and reinforced by barriers at the structural level, like inadequate access to Chinese-language resources and education (35). Cultural ideologies and imagery that dehumanize Asian American women to harmful tropes, like the “*lotus blossom baby*,” are also a product of structural discrimination. At the *institutional* level, Asian American women may experience discrimination through company policies and

practices that prevent them from upward mobility in the workplace (36). *Interpersonal* discrimination emerges through interactions between individuals. This is sometimes blatant, such as being called a racial slur, and other times more subtle and regularly occurring acts, often known as “microaggressions” (37–39). Finally, *individual-level*, or *internalized* discrimination, encompasses how Asian American women adopt the stereotypes about them that are perpetuated by these white supremacist, patriarchal systems (9, 40). Importantly, these various levels of influence are reinforced by one another.

The goal of the current scoping review is to assess how Asian American women qualitatively and quantitatively report their experiences of intersectional discrimination, whether explicitly or implicitly, at *all* levels of influence. Our specific aims are to: (1) synthesize studies that look at Asian American women’s experiences of intersectional discrimination, regardless of whether intersectional discrimination was the studies’ research objective; and (2) examine how experiences of intersectional discrimination are associated with mental health and coping strategies of Asian American women. We hope that findings from the present review can be used to inform future research and tailored interventions and policies to support Asian American women, especially as heightened rates of racialized and gendered violence persist (13).

Methods

Inclusion and exclusion criteria

Included articles had to be peer-reviewed, in English, and conducted in the U.S. We included non-experimental, empirical studies using quantitative, qualitative, or mixed methods designs. Data from the studies had to be collected *from* Asian American women. Therefore, studies measuring how *others perceive* Asian American women were not included. Studies assessing *all levels* of influence (e.g., interpersonal, institutional) of discrimination were included. Moreover, studies could be focused exclusively on any subgroup of Asian American women (e.g., South Asian American women, sexual minority Asian American women) or aggregated samples of Asian American women. All studies had to include results on Asian American women’s experiences of discrimination. Discrimination was defined inclusively such that a range of more specific terminology could be included (e.g., racism, sexism, racial harassment, ethnic teasing, stereotyping, microaggressions). In addition to including results on discrimination, studies had to fall into one, or both, of the following criteria: (1) mention intersectionality at some point in the article; or (2) include results that speak to intersectional experiences of discrimination. This allowed for both explicitly intersectional (criterion 1) and implicitly intersectional (criterion 2) studies. Finally, studies with samples that were not exclusively Asian American women had to present disaggregated findings on Asian American women to allow for proper data extraction for the current study aims.

Search strategy

Studies were systematically searched and screened, following the PRISMA Protocol for Scoping Reviews (41). A database search

was conducted using EBSCO OneSearch platform of MEDLINE, APA PsycINFO, Gender Studies Database, Gale General OneFile, Gale Academic OneFile, JSTOR, ERIC, JSTOR, SocINDEX, Scopus, APA PsycARTICLES, ScienceDirect, and OpenDissertations for peer-reviewed articles. Reference lists of all included studies were also screened for additional articles. We limited our search to articles published since 2000, based on findings that the first quantitative intersectionality study was published in 2001 (42). The last search was conducted in May 2022. The search strategy is included in [Supplementary Table S1](#).

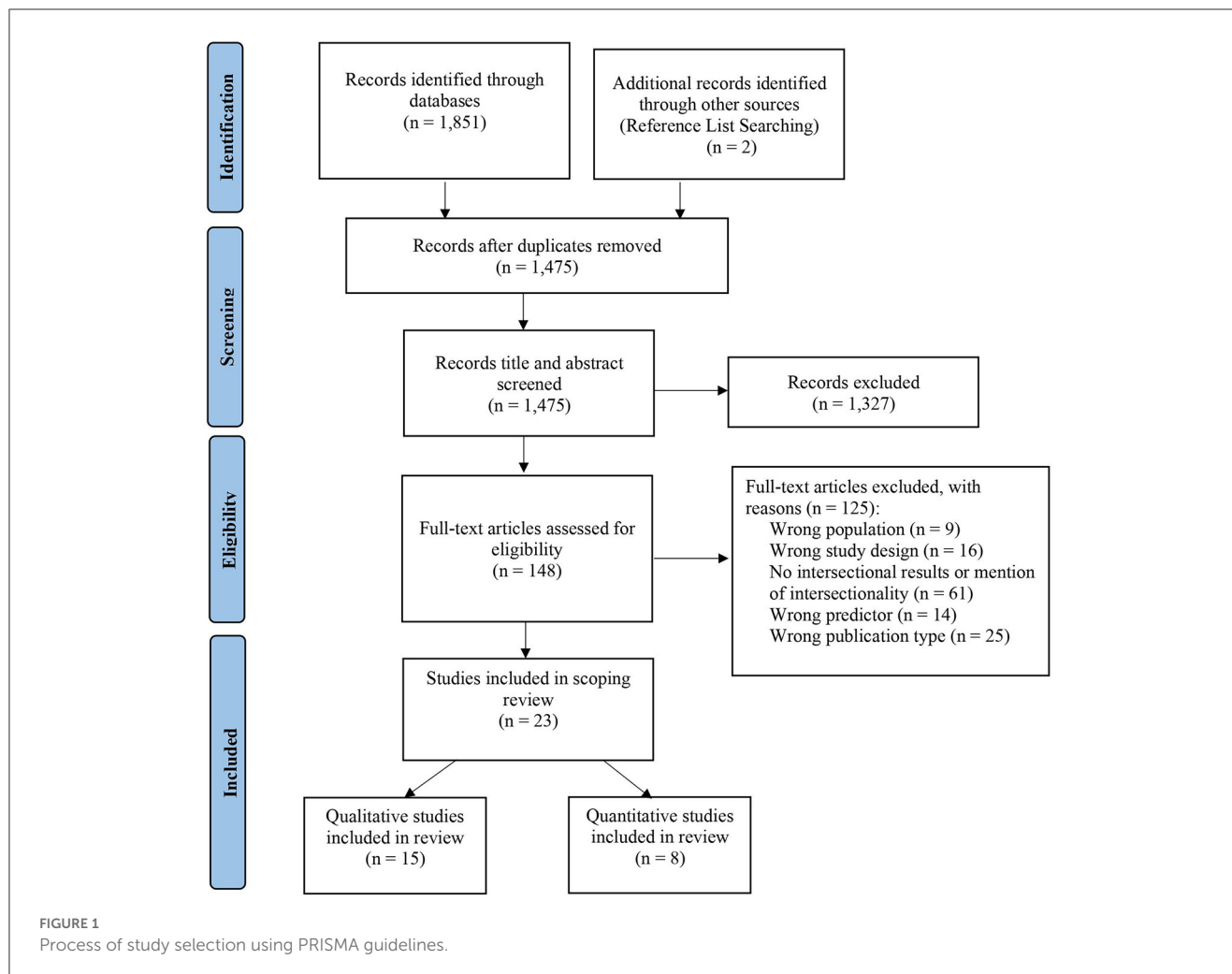
Review and data extraction procedure

Duplicate articles were removed prior to screening. Each article was screened by two independent reviewers using Rayyan, a free online software for systematic review study management (43). First, the full sample of articles was title- and abstract-screened by the two independent reviewers. Each independent reviewer excluded articles if they believed they did not meet the inclusion criteria described above. The two independent reviewers then met to reach consensus on articles where there was disagreement on whether they should be included in the full-text screening phase. Then, the two reviewers full-text screened the samples independently, using tags in Rayyan to indicate why an article should be excluded (e.g., tagged as “no intersectionality component”). Again, the two reviewers met to reach consensus on any articles where there was disagreement and come to agreement on the final sample of included articles.

Data was extracted across all included studies and input into Excel tables. Extraction was conducted on general article characteristics (author, title, journal, year), study theoretical framework (intersectionality or other), level of discrimination assessed (structural, institutional, interpersonal, internalized), study aims, and methods (quantitative, qualitative, mixed methods). Given methodological differences in quantitative and qualitative studies, data extraction of study findings was then conducted in separate Excel tables for qualitative and quantitative articles. Among the quantitative studies, a summary of key findings was entered in an Excel table. For qualitative studies, the study team modeled their approach after thematic synthesis, a form of systematic review of qualitative research (44, 45). Emergent themes related to discrimination, mental health, and coping were coded in a data extraction table. Then, an analysis across qualitative studies was conducted on recurring emergent themes that appeared in more than one study. These recurring emergent themes were identified and listed in a separate document. Definitions of commonly emergent themes were created based on findings from the studies. Illustrative quotes from endorsed studies were identified and a count of studies relevant to each theme was calculated. Finally, a synthesis of study characteristics across the full sample of studies was conducted.

Positionality

The first author is a 29-year-old, biracial, Asian-white cisgender woman (Nicola Forbes). She is in the fourth year of her Ph.D.



in developmental psychology. As an Asian presenting woman and having been raised by a Chinese mother and white father, she has always been passionate about understanding the racialized and gendered experiences of Asian women navigating white patriarchal spaces. The second author is a 21-year-old, Asian cisgender woman (Lauren Yang). She is an undergraduate senior at New York University studying biology and on the pre-medicine track. She was born in the U.S. and raised by two Chinese immigrants. She can speak Mandarin, Cantonese, and English. The third author is a 38-year-old, Asian cisgender, bisexual woman (Sahnah Lim). She is an assistant professor with training in public health. She was born in the U.S. and raised in Korea in her formative years and speaks English and Korean fluently. She is experienced in systematic scoping reviews and in conducting research with Asian American women.

Results

Overall study characteristics

The search yielded a total of 1,475 studies for title and abstract screening. Common reasons for exclusion during the title and abstract phase included wrong publication type, wrong

study design, or wrong population. After title and abstract screening, 148 articles met the criteria for full-text review. During full-text screening, “no intersectional results or mention of intersectionality” was the most common reason for exclusion ($n = 61$). The sample resulted in 23 studies examining discrimination experiences among Asian American women, including two that were identified from study reference lists. Of the 23 studies, 15 used a qualitative design and 8 used a quantitative design. There were no mixed-methods studies that met our inclusion criteria. See [Figure 1](#) for the consort diagram.

Studies on specific subgroups

Of the 23 articles, 14 were intentionally focused on a specific subgroup of Asian American women (46–59). Four studies examined the experiences of a particular ethnic group, including Japanese American women married to white men (53), Bhutanese-Nepali young women (54), Chinese and Japanese American women (56), and Indian women physicians (46). One study looked at biracial Black-Asian Americans (55). One article was focused on lesbian and bisexual Asian American women (52) and one study was focused on trans and gender diverse Asian Americans (51). Four studies explored the experiences of Asian American

women within a specific age group; one included Bhutanese Nepali young women between the ages of 11–24 (54), one examined undergraduate Asian American women between the ages of 18–22 (57), one looked at emerging adult Asian American women (59), and one used a sample of “older” women between the ages of 42–52 (56). Finally, there were five studies exploring Asian American women in the workplace context (46–50). The characteristics of all 23 studies are included in [Supplementary Table S2](#).

Intersectional framework

Nineteen of the 23 studies mentioned intersectionality at some point in the study. Nine explicitly used intersectionality as the conceptual framework for their studies. Four of the explicitly intersectional studies were qualitative (47, 50, 57, 58) and five of them were quantitative (60–64). Seven of the studies described intersectionality in the introduction but did not state explicitly that it was the theoretical framework for their study (46, 49, 52, 54–56, 65). Three mentioned intersectionality in the discussion section when drawing on the implications of their findings or suggestions for future research (51, 59, 66). One qualitative study discussed “intersections” without explicitly referring to the intersectionality framework (48). Three qualitative studies never mentioned intersectionality, or “intersections,” at all. However, results on intersectional discrimination emerged across all three, such as themes on the exoticization or fetishization of Asian American women (38, 53, 67).

Measure development and validation

Two of the included quantitative studies were scale development and validation studies (61, 63). Both studies utilized an intersectional framework when developing the new scales. One study developed a new measure to assess intersectional microaggressions experienced by Asian American women (63). The Gendered Racial Microaggressions Scale for Asian American Women, a 22-item bifactor model, yielded a general factor and four subfactors: ascription of submissiveness, assumption of universal appearance, Asian fetishism, and media invalidation. The scale was significantly associated with sexism, racial microaggressions, depression, and internalized racism (63).

The second study developed and validated a scale to assess the shifting behavior of Asian American women. Shifting is the process of changing one's appearance, language use, and other behaviors to evade experiences of discrimination (61). The study resulted in the 12-item Asian American Women's Shifting Scale. The scale included three factors: white beauty conformity, bicultural shift, and Asian language/culture avoidance. The scale was significantly associated with subtle racism, blatant racism, gendered racism, and bicultural identity (61).

Levels of influence of discrimination

Various levels of influence of discrimination were covered within the breadth of our study sample. Eight studies did not specify the level of influence of discrimination that they aimed to assess but their results suggested multiple levels of influence (46, 49, 50, 52, 54, 57, 58, 65). All eight of these were qualitative

studies. Among the other seven qualitative studies, some specified a particular level of influence in their study aims; one aimed to look at *internalized*, or *individual-level*, discrimination (55) and three aimed to identify *microaggressions* specifically (38, 48, 53). Other qualitative studies did not name the specific level of influence until the results section; one qualitative study identified discrimination at the *interpersonal* level in their results (67) and one identified discrimination at the *internalized* and *structural* levels in their results (66). The last qualitative study presented results related to *structural*, *institutional*, and *interpersonal* discrimination (47). Importantly, even among the qualitative studies that named the level of influence of discrimination in their study aims or results, most studies included findings related to additional levels of influence.

Several of the quantitative studies did not identify the level of influence of discrimination being assessed. However, based on the scales used in the studies, we categorized the levels of influence for each quantitative study. There was less diversity in the range of levels of influence for the quantitative studies. All eight studies included a measure of *interpersonal* discrimination (51, 56, 59–64). Two studies also utilized a measure of *internalized* discrimination (59, 63) and one measured *institutional* discrimination (51).

Qualitatively defining intersectional discrimination

Findings from the qualitative studies allowed for an exploration of *how* Asian American women are reporting discrimination at the axis of racism and sexism. Several themes emerged across the 15 qualitative studies. The most common emergent themes on intersectional discrimination against Asian American women were collapsed into four categories: (1) *Exoticization, hypersexualization, and fetishization*; (2) *Ascription of the servile and passive Asian woman*; (3) *White female beauty standards and representation*; and (4) *Workplace tokenization and scrutiny*.

Exoticization, hypersexualization, and fetishization

The most prevalent theme across studies was the racialized sexualization of Asian American women through the exoticization, hypersexualization, and fetishization of their bodies. Across the 11 studies where this theme emerged (38, 47, 48, 52–55, 57, 58, 65, 67), Asian American women reported feeling fetishized through objectifying and infantilizing comments about their “*doll-like or child-like*” appearances and “*porcelain-like features*” [(57), p. 487]. Asian American women also reported racialized sexual objectification of their body parts by white men, with one participant stating, “*I had a Caucasian boyfriend ask me if my vagina were slanted like my eyes, and then repeat this to his friends. Same boyfriend asked me to use ‘tiny Oriental fingers’ to braid his hair for him*” [(65), p. 39]. Participants across studies mentioned being on guard for fetishization: “*I come across a lot of fetishization of Asian, usually in the form of telling me I’m exotic or look like Mulan [a Chinese female Disney character]. So, every time I date someone, I have to take into consideration that it might*

be ‘yellow fever’” [(52), p. 58]. Japanese women married to white men mentioned being called “bar girls, prostitutes,” and told, “so you know how to please a man” [(53), p. 185]. Women even reported interpersonal discrimination in the form of racialized sexual harassment while in the workplace (47, 48, 50). For example, one Asian American woman teacher stated that a male colleague told her “Asian ladies make great wives” while at work [(48), p. 606].

Ascription of the servile and passive Asian woman

Ten studies included findings related to stereotypes of Asian American women as docile, subservient, domestic, and in need of white male saviors (38, 46, 47, 50, 53, 57, 58, 65–67). Some Asian American women reported being socialized by their parents to defy the servile Asian woman trope: “you should never let the husband fully control you ever” [(58), p. 8] whereas other families reinforced it through their gendered norms in the home and expectations for women to be self-sacrificing and not complain (66). Some career women were told they were not assertive enough or even lost opportunities for promotion due to being perceived as lacking leadership skills, an ascription of these stereotypes (46, 47, 50, 57, 65).

White female beauty standards and representation

An additional but less frequently emergent theme involved commentary on white female beauty ideals and the representation of Asian women in the media. Among three studies, women reported having white beauty standards imposed on them by their family, peers, romantic partners, and the media, such as expectations of being blonde, tall, thin, and light-skinned with large breasts, light-colored eyes, tall noses, and double eyelids (54, 58, 67). Asian American women also discussed the lack of representation or negative representation of Asian women in the media across three studies (57, 58, 67). One participant mentioned that if Asian women were portrayed in the media, it was only as common and problematic stereotypes such as, “yellow fever in the media or that they are the smart one, quiet, socially awkward, and nerdy” [(58), p. 9].

Workplace tokenization and scrutiny

In addition to the racialized sexist stereotypes that emerged in the workplace, Asian American women also reported tokenization by their superiors and colleagues across five studies (48–50, 53, 65). Women described having excess responsibilities due to being the only Asian woman, the only woman of color, or the only person of color in the workplace. These additional tasks were sometimes centered on diversity efforts or traditionally domestic traits. For example, one teacher mentioned, “we’re always being asked to run the cultural events. Like, the assistant principal approached me and asked if I’d be willing to help lead a cultural potluck” [(48), p. 613]. Moreover, participants in three studies described being unfairly “under the microscope” (46, 49, 50). Women felt that their work was under heightened scrutiny and that if they made mistakes, they received a harsher scolding than their male and/or white colleagues. Women also described being questioned about their intention to

start a family during the job recruitment process: “I was asked whether I was single, whether I was seeing somebody, whether or not I was serious or married, and if there was any possibility of me having children” [(46), p. 666].

Psychological wellbeing and coping: Qualitative and quantitative findings

Body image and eating

Several studies assessed how discrimination relates to measures of mental health and coping among Asian American women. Five studies explored how discrimination was associated with body shame or disordered eating (57, 58, 64, 65, 67). One quantitative study found that gendered racial microaggressions predicted disordered eating, but sexism and racism did not (64). This relationship was mediated by body shame, media internalization, and emotion dysregulation. Findings from four of the qualitative studies bolster these quantitative findings (57, 58, 65, 68). Through open-ended responses and semi-structured interviews, Asian American women discussed issues of body surveillance, appearance preoccupation, body dissatisfaction, and even the desire to change their appearance (57, 58, 65, 67). For example, one Indian American woman stated that she felt constant pressure to be thin and while growing up she always heard messages that, “skinny is the best” [(67), p. 302]. Importantly, one study mentioned how Asian American women are falsely assumed to not experience body image-related issues because they are expected to be naturally thin (65).

Depression and suicidal ideation

Four studies in total examined how discrimination relates to depression and/or suicidal ideation for Asian American women (56, 59, 60, 66). Using latent class analysis among a sample of older women, Chinese American women were most likely to be in the latent class of the highest accumulation of interpersonal discrimination (56). This class was also most likely to report depression. Interestingly, Japanese American women were most likely to be in the latent class of no interpersonal discrimination, which also reported the lowest levels of depression (56). Among a sample of Asian American women, experiences of gender harassment were predictive of more depression. Racial harassment, sexual coercion, and unwanted sexual attention were predictive of posttraumatic stress symptoms (60). However, racial harassment was not significantly associated with depression. Two studies, one quantitative and one qualitative, explored how discrimination experiences relate to suicidality (59, 66). Quantitatively, it was found that gendered racial microaggressions were significantly associated with suicidal ideation and that higher rates of gendered racial microaggressions exacerbated the relationship between self-negativity (i.e., the desire to be white and reject one’s Asian identity) and suicidal ideation (59). One qualitative study explored how the model minority myth contributes to the suicidality of Asian American women. Narrative findings demonstrated that Asian American women feel burdened by the pressure to succeed, and some participants reported that past suicide attempts occurred after

extreme burnout due to racist, sexist, and intersectional trauma perpetuated in the workplace and the home (66).

Coping

Six of the 23 studies sought to identify how Asian American women cope with these experiences of discrimination (49, 52–54, 61, 62). Using the recently developed Asian American Women's Shifting Scale (61), one quantitative study explored the role of shifting in the face of, or anticipation of, discrimination. It was found that shifting mediates the relationship between Asian American identity and Asian American racism-related stress (62). Among the qualitative studies, Asian American women reported a multitude of coping mechanisms. Japanese American women discussed turning to their white husbands for support (53). However, some of them did not find this helpful. One Japanese American woman reported that her white husband perpetuated microaggressions himself. When confiding in her husband about experiencing microaggressions, another Japanese American woman stated that her, “*husband said that she did not have to make ‘a big scene, its nothing’; in this moment, [participant] decided, ‘I am divorcing this man’*” [(53), p. 188]. Additionally, Asian American female faculty at a Christian university discussed the following coping strategies: conforming to fit in with their white colleagues, withdrawing and avoiding, and praying (49). Similarly, Bhutanese-Nepali young women discussed finding safe spaces at school where they could be among themselves to avoid being discriminated against by their peers (54). Asian American lesbian and bisexual women discussed conforming to their social contexts, de-emphasizing their sexual minority status, and avoiding situations that could harm them (52). Although many of these coping tactics employ strategies of shifting and conforming to hegemonic culture, several participants across the qualitative studies also highlighted the importance of relying on their social support systems and communities (49, 52–54). Others discussed utilizing empowering strategies such as addressing discrimination or anticipated discrimination in some way (49), calling out discrimination in real-time (53, 54), resisting oppressive norms and engaging in social activism (52).

Discussion

The present study systematically reviewed the existing research on Asian American women's experiences of discrimination, with a particular focus on *intersectional* discrimination. The review found that Asian American women are commonly hypersexualized and assumed to be passive and docile, experiences that are rooted in white sexual imperialism and cultural stereotypes. Quantitative study findings supported these conclusions. The Gendered Racial Microaggressions Scale for Asian American Women includes several factors that mirror the themes from our qualitative synthesis, such as fetishization and ascription of submissiveness (63). Asian American women also reported being impacted by white beauty ideals and a lack of representation, or misrepresentation, in the media. Importantly, one quantitative study provided support for the correlational relationship

between intersectional discrimination, media internalization, and disordered eating habits (64). The included studies also pointed to the role that discrimination plays in other forms of psychological distress, such as depression, posttraumatic stress, and suicidal ideation. However, it is critical to highlight that most of the studies in our sample used qualitative methods. Although qualitative methods provide a direct voice to a population and a clear narrative of their real-life experiences, they are not meant to be widely generalizable. Quantitative designs can assess the size of an effect of a statistical relationship between two variables, such as discrimination and mental health. Quantitative methods are also used to examine whether a correlational relationship is statistically significant or likely due to chance. Thus, there is a particular need to *quantitatively* assess the relationship between *intersectional* discrimination and psychological wellbeing among Asian American women, in addition to gathering rich qualitative data that directly elicits the voices of participants.

Additionally, although examining workplace discrimination was not one of our research aims, several studies emerged that were focused on discrimination in career contexts. More specifically, samples included Indian women physicians (46), Asian American female doctoral students and early career scholars in STEM (47), Asian American women teachers (48), Asian American women in educational leadership (50), and Asian American female faculty at a Christian university (49). Interestingly, workplace discrimination also emerged in several of the non-career studies (53, 65), highlighting how this may be a particularly salient context for the subjugation of Asian American women. It is critical to note that Asian American women were ascribed passive and subservient demeanors by their colleagues and superiors, hindering them from moving up their workplace ladder. This elucidates how Asian American women experience the compounding effect of the *glass ceiling* and *bamboo ceiling* (i.e., metaphorical barriers to preventing women and Asian Americans, respectively, from gaining leadership positions). Together, these findings suggest that even when Asian American women achieve educational and economic success, they are differentially treated in the workplace, dispelling the model minority myth which suggests that Asian Americans do not experience discrimination (9).

Several studies in our sample revealed coping strategies used by Asian American women to prevent and protect themselves from the harmful effects of discrimination. Some participants discussed avoiding situations that could lead to discrimination (49, 54). For others, it was useful to shift their appearance, accent, and cultural orientation to conform to white, hegemonic norms (49, 62). This coping mechanism could be a conscious survival tactic to protect from being excluded and targeted by dominant members of society or demonstrate an internalization of white patriarchal values imposed on them through direct and vicarious discrimination. More research is needed to understand the reasons why Asian American women use shifting to cope. Future quantitative research should make use of the Asian American Women's Shifting Scale (61) to better understand the relationship between shifting and potential risks or protections associated with this coping strategy.

Although both quantitative and qualitative results pointed to the use of shifting, some participants also discussed additional coping mechanisms that highlighted the importance of social

support and empowerment. Participants across several qualitative studies reported leaning on their partners or communities for support (49, 52–54). For some, it was important to address discrimination in the moment (53, 54). Importantly, some women also reported empowering themselves by turning to their religion (49) and engaging in social activism (52). There is a particular need for more strengths-based research on effective coping strategies among Asian American women that account for the importance of individual- and community-level empowerment.

Considering the present findings, several major gaps in the literature were identified. First, there is an overall lack of research using an explicitly intersectional framework. Three qualitative studies did not mention intersectionality at all, despite their results pointing to the confluence of racism and sexism (38, 53, 67). Consistent with the literature on the methodological challenges to intersectional research, participants in these three studies discussed intersectional experiences, such as being exoticized and fetishized, despite never being prompted to speak from an intersectional perspective (69). The fetishization and exoticization of Asian women are products of the codified structures that have dehumanized them into sexual objects for white men throughout American history (26, 29). Therefore, researchers within this specialty should take to using an explicitly intersectional framework. When using an explicitly intersectional framework, the reader understands that the scholars were thinking proactively about how multiple interlocking inequities shape the lives of their study population. Further, an explicit intersectional framework requires the scholars to analyze study findings by overlaying historical and political forces, rather than simply presenting results at face value (69).

Furthermore, although there were several studies conducted in the last few years, none of the included studies looked at discrimination related to the COVID-19 pandemic. This is interesting because research from *Stop AAPI Hate* has consistently found that Asian American women are reporting discrimination at significantly higher rates than men since the pandemic began (13). These disparate findings could be due to relatively lower reporting by Asian American men compared to women, or it could be due to the compounding effect of gendered discrimination on anti-Asian discrimination for women. However, research on discrimination during the pandemic has typically not utilized intersectional measures of discrimination. Instead, many have employed quantitative measures of racial/ethnic discrimination (70, 71). This further highlights the need for more intersectional quantitative assessments of the multiplicative effect of racial and gender-based discrimination on Asian American women during the pandemic.

Overall, most of the included studies focused on *interpersonal* discrimination, especially among the quantitative studies. All eight of the quantitative studies measured interpersonal discrimination. This is unsurprising, given that widely used and validated quantitative measures of discrimination often aim to assess interpersonal discrimination, such as the Everyday Discrimination Scale (72). Additionally, the Gendered Racial Microaggressions Scale for Asian American Women is the only existing validated scale measuring intersectional discrimination against Asian American women (63). Several of the included quantitative studies

used this scale in their analyses (59, 61, 64). However, this scale is also a measure of interpersonal discrimination, specifically *microaggressions*, further demonstrating the need for more quantitative assessments that capture other levels of influence of discrimination. On the other hand, our qualitative findings pointed to the ways in which Asian American women are disparaged across multiple levels. For example, participants spoke about structural discrimination, such as how the misrepresentation of Asian women in the media impacts their self-esteem (54, 58, 67). Qualitative findings should be used to influence the development of more quantitative measures of intersectional discrimination, particularly at the structural, institutional, and internalized levels. It was also interesting that many of the qualitative studies aimed to assess one level of influence of discrimination, but results pointed to various, or all, levels of discrimination based on respondents' narratives. This highlights the utility of qualitative research in unearthing how Asian American women are experiencing *simultaneously* occurring, multiple levels of intersectional discrimination.

There are several limitations within our scoping review. Our review was limited to the intersections of racism and sexism to understand Asian American women's experiences. This does not represent the additional axes of marginalization that Asian American women experience, such as classism, colorism, homophobia, and transphobia. Moreover, due to the largely heterosexual samples of our studies, the present review was written from a heteronormative lens that largely represents white men as the perpetrators of discrimination. However, white women also benefit from dehumanizing women of color (22). For example, sexual minority Asian American women report being fetishized by white women too (52). Sexual and gender minoritized Asian American women and femmes may also be subjected to intersectional discrimination that is perpetrated by cisgender-heterosexual Asian American women. Thus, there is especially a need for more research on the experiences of intersectional discrimination among sexual and gender minority Asian American women and femmes who are impacted by reinforcing heterosexist, racist, and transphobic systems.

We were also limited in our ability to present findings on specific subgroups due to the lack of disaggregated data in our samples. "Asian American" was used broadly to include American women of any Asian descent. Disaggregation of the sample data was not within the scope of the review, and some included studies did not provide enough demographic characteristics of the study sample. Most samples included largely East Asian, heterosexual, and college-educated Asian American women, misrepresenting the diversity of Asian American women's experiences. For example, one study using latent class analysis found that Japanese American women and Chinese American women belonged to different latent classes based on the frequency of their experiences of discrimination (56). This highlights the unique experiences of different subethnic groups of Asian American women.

Additionally, we did not assess variation in results by age, class, education, skin tone, religion, immigration status, or sexual orientation. In our sample, one study examined discrimination among trans and gender diverse Asian Americans (51). Findings showed that transwomen reported elevated rates of unequal treatment in comparison to other trans and gender diverse Asian

Americans (51). Further, several studies utilized samples within specific developmental stages, particularly adolescence and young adulthood (54, 57). Asian American women in their adolescence and young adulthood use higher rates of social media, where interpersonal discrimination is common (58, 73, 74). They are also at the peak of identity development and may be more impacted by the negative psychological consequences of discrimination (75). These studies suggest that Asian American women of various ages may have distinct experiences of intersectional discrimination and the mental health consequences associated with it. However, due to a lack of studies with disaggregated data and specific populations, we were unable to draw conclusions on the experiences of subgroups of Asian American women. More research is necessary to better understand the diversity in experiences of Asian American women across various intersections.

Findings from the present study have several important implications. First, clinicians working with Asian American women should use an intersectional framework to assess how their experiences of oppression and marginalization have shaped their mental health and coping mechanisms. For example, for patients suffering from body shame or disordered eating, it is important to work with them to decolonize and deconstruct their internalization of white female beauty ideals. Similarly, our study findings can be applied to modify workplace diversity practices that prioritize the hiring of men of color and white women over that of women of color. Implementing structural changes to workplace hiring committees that would advocate for hiring and promoting Asian American women, and other women of color, can help to eliminate existing inequities in the workplace. Given reports of intersectional interpersonal discrimination in the workplace, all organizations should require diversity, equity, and inclusion training to teach white colleagues about cultural humility in the workplace. Proper grievance procedures to report gendered racism should also be implemented in all working contexts to ensure that there are accountability structures for perpetrators of intersectional discrimination.

The results from the present study should also be applied to inform healing spaces, interventions, and policies to support Asian American women and their psychological wellbeing. Findings from the studies that examined coping mechanisms demonstrated that many Asian American women use strategies of shifting to conform to white patriarchal norms. However, Asian American women should not have to modify who they are to protect themselves. Instead, we need more feminist decolonization spaces where Asian American women can process, disentangle, and recover from internalized oppression within a safe environment. These spaces should exist within schools, workplaces, and other institutions, and be made accessible for women of all socioeconomic backgrounds. It is critical to note that existing white supremacist, patriarchal systems within the U.S. are responsible for the continued violence against Asian American women at all levels of influence. Thus, it is not the responsibility of Asian American women to improve and challenge these oppressive structures alone. However, Asian American women should be encouraged to find empowerment to cope with the current systems. Interventions to support Asian American women should center on building community, connection, and healing practices. As a society, we must continue to deconstruct the stereotypes that exist to harm this population.

Finally, we must eliminate systemic and structural barriers that disproportionately impact all women of color and create policies that champion and protect them from gendered and racialized ridicule and violence.

Conclusion

This study examined how Asian American women experience and report intersectional discrimination and psychological wellbeing. Through a synthesis of the existing literature, we found that Asian American women are hypersexualized, ascribed as submissive, report having to meet white beauty ideals, and are misrepresented in the media. Several studies also highlighted how Asian American women face direct and indirect discrimination in the workplace. Additionally, included studies examined how intersectional discrimination against Asian American women contributes to their poor mental health outcomes such as depression, suicidal ideation, negative body image, and disordered eating. Asian American women reported a range of strategies to cope with these experiences, such as shifting to dominant norms, avoiding harmful contexts, finding social support, and engaging in activism. Although our review was able to identify 23 studies that met inclusion criteria, there is still a need for future research using an explicitly intersectional framework when examining the experiences of Asian American women. Nonetheless, the present findings point to the concurring, harmful forces of racism and sexism that shape the psychological health of Asian American women across different contexts and various stages of life. Importantly, Asian American women have reported disproportionately high rates of hate incidents and discrimination since the start of the COVID-19 pandemic, suggesting they may be at increased risk for psychological distress. However, they remain an understudied and underserved population. Therefore, findings from the present review highlight the urgent need for future research on this population and the need for increased funding for tailored interventions that support and uplift this population through a feminist and decolonial framework. Findings from this study should also be used to inform institutional, policy, and system-level changes to protect, heal, and empower Asian American women and other women of color.

Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

Author contributions

NF was responsible for study conceptualization, article screening and review, data extraction, and writing. LY was responsible for article screening and review and manuscript review. SL was responsible for study conceptualization and writing. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2023.993396/full#supplementary-material>

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#NotTheSame: Asian American subgroups moderate the relation between campus racial climate and perceived burdensomeness during the COVID-19 pandemic

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The present study examined the effect of campus racial climate on perceived burdensomeness, a suicide risk factor, among Asian American college students during the COVID-19 pandemic, when anti-Asian racism was present. To disaggregate these data, there was a test of whether Asian American ethnicity subgroup identification as Southeast and South or East Asian changed the association between campus racial climate on perceived burdensomeness. The current sample included 148 college students, 73 Southeast or South Asian Americans, and 75 East Asian American. The study participants were enrolled at a small liberal arts institution located in the Pacific Northwest region of the United States. Researchers collected data across 3 days (9–12 April 2020) via an online questionnaire. Both groups reported similar levels of campus racial climate and perceived burdensomeness. Bivariate correlations indicated that campus racial climate was positively correlated with perceived burdensomeness for Southeast and South Asians only. Moderation analyses revealed that a negative campus racial climate was related to greater perceived burdensomeness among Southeast and South Asian, but not East Asian, American students. This finding supports the need for disaggregation of Asian subgroups in mental health research to understand the diverse experiences within the Asian American community. Furthermore, there is a need for higher education institutions to consider tailoring interventions and tools that fit into the unique cultural and sociohistorical experiences of ethnic and racial subgroups among Asian American students.

KEYWORDS

anti-Asian racism, campus racial climate, suicide risk, perceived burdensomeness, college mental health, disaggregate

1. Introduction

The syndemic of COVID-19 and anti-Asian racism has compounded and exacerbated the negative effects of one another (1). Discrimination to the degree of hate crimes was rampant, and inequalities across health, social, and economic spheres were exposed (2, 3). Such discrimination is historical (4–7), systemically disadvantaging people of Asian heritage and perceiving them as a “threat” and a “perpetual foreigner,” but still harmful today (8–10). Due to the recent pandemic-related anti-Asian racism, there is a concern about the increase in negative mental health symptoms among Asian Americans (11, 12). Among Asian American (AsAm) college students during the pandemic, racial discrimination was associated with a greater likelihood of endorsing at least one clinically significant mental

health condition, including suicidal ideation and moderately severe or severe depression (12). Prior to the pandemic, suicide was documented as the second leading cause of death for AsAm college students aged 15–34 years (13, 14), and AsAm college students were 1.6 times more likely to seriously consider suicide attempts than white college students (15). Together with the latest research on the increasing suicide attempts and ideation among AsAm college students during the pandemic (16, 17), this study will examine the impact of racism-related stressors on suicide risk factors among AsAm college students.

Of the myriad of stressors that AsAm students experience, racial discrimination is of note due to the link between discrimination and negative mental health symptoms (18, 19). Furthermore, the danger of suicide among AsAm young adults highlights the relationship between discrimination and suicide ideation or suicide risk factors, specifically perceived burdensomeness (20). Perceived discrimination predicting suicide risk is found among other racially minoritized groups as well (21). Thereby, researchers are becoming more cognizant of the ongoing, pervasive experience of prejudice and discrimination against minoritized people and its effects on mental wellbeing and risk factors. For this study, we examined perceived burdensomeness, a suicide risk factor, among AsAm college students.

Joiner (22) coined the term “interpersonal needs” to describe the two main psychological states that incite one’s desire for death by suicide—perceived burdensomeness, the feeling of being a liability and burden to others, and thwarted belongingness, which is defined as one’s presumed ineptitude to higher quality relationships. Although previous studies have tested this theory among predominantly white people, several studies endorse the use of this theory among minoritized populations as well. Within a sample of university students from China, for instance, researchers observed a significant relationship between interpersonal needs and suicide ideation while controlling for gender, social support, self-esteem, and age (23).

Given the cultural values of group cohesion and harmony among AsAm college students, researchers have examined the impact of unmet interpersonal needs on depressive symptoms (24, 25) and higher shame (26). Perceived burdensomeness has drawn attention as a double bind to AsAm students since it may increase the desire for suicide and decrease the willingness to seek professional mental health help among AsAm college students (27). Qualitative studies on suicide are congruent in that unfulfilled interpersonal expectations strongly influence suicide ideation (20).

However, there is a gap in the literature on how racism-related stressors predict suicide risk factors among AsAm young adults. Wong et al. (20) summarized key themes relating to suicide risk for AsAm college students as “unfulfilled interpersonal expectations.” One negative interpersonal interaction was rejection and racism by a dominant group. According to these findings, we believe that negative racial experiences influence suicide ideation in this sample. In addition, Wang et al. (28) found that perceived discrimination predicted suicide ideation only at higher levels of perceived burdensomeness and thwarted belongingness among Asian international college students. The interaction between perceived discrimination and suicide risk factors appears to lead to negative mental health symptoms. Although pandemic-related

anti-Asian racism and interpersonal needs remain unstudied, the current literature provides support for these relationships.

Studies also suggest that these patterns are different across AsAm ethnic subgroups. For instance, research on help-seeking behavior reveals that East Asian immigrants avoided seeking mental health treatment due to cultural stigma, honor/shame culture, family pride, financial constraints, a sense of failure, and lack of knowledge and awareness regarding mental illnesses (29, 30). However, participants from Southeast and South Asian countries were hindered by structural barriers, such as inaccessibility, unavailability, and unaffordability of resources, as well as cultural barriers, including loss of face, colonial mentality, and acculturation (30). Regarding the impact of discrimination, the negative effects are different when comparing the AsAm ethnic subgroups of adults (31) or generation status among AsAm college students (32). These are two examples of how identifying disaggregating AsAm data, whether by ethnic subgroups or generational status, can elucidate future mental health illness prevention and intervention.

Since we examined the experiences of young adults and college students, this study focused on campus racial climate as a proxy for racism-related stressors. An institution’s climate is a global evaluation of an institution by its members based on observations on various dimensions, including racial climate (33). Campus racial climate is a student’s lived experience and perception of their institution with regard to racial dynamics and racism. Studies have found that students of color have more negative and hostile perceptions of the racial climate on college campuses than their white peers (34, 35). Furthermore, students of color report more frequent experiences of racial discrimination than white students (36).

There is limited research on the impact of campus racial climate on the mental health of AsAm college students. Existing research shows that perceived negative campus climate is related to higher levels of self-reported depression among AsAm college students (37). Perceived racial discrimination is also associated with higher psychological distress, suicide ideation, anxiety, and depression in AsAm and Latino college students (18). Furthermore, much of the current literature lacks a report on disaggregated data on AsAm students. Museus and Park (38) conducted a qualitative study of AsAm undergraduates and their experiences with racism during college. Although all AsAm students reported that racial hostility and vicarious racism (witnessing racist acts directed at people of color) contributed to a reduced sense of safety and a greater climate of fear on campus, Laotian and Vietnamese students expressed feelings of isolation due to an underrepresentation of their own or other AAPI ethnic subgroups on campus. One mixed-method research study found that Filipino and Southeast Asian students reported the highest frequency of negative comments about race or ethnicity compared to East Asian and South Asian students (39). However, this finding was not statistically significant. The same study found that, compared to East Asians students, Southeast Asian students reported significantly greater dissatisfaction with their overall academic and social experiences. More studies are needed to understand the unique impact of racial climate on the mental health of students who belong to different ethnic and regional AAPI subgroups.

The aims of the present study are threefold: to disaggregate AsAm college student data to identify meaningful subgroup differences, to measure anti-Asian racism by college students' perception of their campus racial climate, and to examine detrimental effects of anti-Asian racism on perceived burdensomeness, which is a suicide risk factor. Thus, the study bridged the gap on the effects of campus racial climate on mental health risk factors and explored the effects of disaggregating AsAm college student data. The particularities of Asian ethnic subgroups were studied following an appeal for disaggregating data about AsAm health (40, 41), suicidology (42), and higher education (43). Specifically, we hypothesized that a negative campus racial climate would be associated with greater perceived discrimination, as we expect campus racial climate to function as a proxy for perceived racial discrimination on campus. We hypothesized that subgroup identification as Southeast and South Asians or East Asian would strengthen the association of campus racial climate on perceived burdensomeness. In other words, the campus racial climate during the COVID-19 pandemic would be associated with greater perceived burdensomeness depending on Asian ethnic subgroup identification.

2. Materials and methods

2.1. Participants

A total of 158 Asian American (AsAm) college students participated in the larger project. Researchers categorized 73 participants as Southeast/South Asian (Filipino, Vietnamese, Indian, Thai, Pakistani, Burmese, Cambodian, Indonesian, Singaporean), 75 as East Asian (Chinese, Korean, Taiwanese, Japanese), eight as multiethnic (denoting two or more ethnicities such as Chinese and Filipino), one as Native Hawaiian and Pacific Islander, and one where the open-ended ethnicity self-identification question was left blank. We included only college students of Southeast/South and East Asian ethnicity for the current study ($n = 148$) and excluded participants categorized as multiethnic or without specific ethnic information.

2.2. Procedure

The present study received the approval of the institutional review board. This study was part of a larger project that examined the perceptions of institutional support among AsAm college students (44) and the level of ethnocultural empathy toward Asian and AsAm college students by white college students (45) during the COVID-19 pandemic. Participants were eligible for the study if they were at least 18 years old and were enrolled in the university's undergraduate program. We collected data through an online, de-identified survey method over 3 days (9 April 2020–12 April 2020). Of note, the institution shifted to online learning on 13 April 2020. Participants volunteered to complete a brief survey. They were asked to provide non-documented informed consent, including a brief description of the project. At the end of the survey, participants could enter a raffle to win a \$250 gift card for their participation. A debrief message expressed gratitude for their

participation and provided participants with a list of resources for professional psychological help.

2.3. Measures

2.3.1. Campus racial climate

We chose four of five items of the Racial Experiences subscale from Reid and Radhakrishnan (33) to measure campus racial climate ($\alpha = 0.70$). We added a stem (e.g., "Since the COVID-19 outbreak...") to each item to focus on reports of campus racial climate from the recent COVID-19 pandemic. Two of the sample items were "Since the COVID-19 outbreak, I have experienced racial insensitivity from other students" and "Since the COVID 19 outbreak, the interracial climate at Seattle Pacific University is tense." Participants rated each item on a 7-point Likert scale (1 = *strongly disagree*; 7 = *strongly agree*). We used the average of four items. The measure demonstrated good internal consistency ($\alpha = 0.85$).

2.3.2. Perceived burdensomeness

A total of 10 items of the Interpersonal Needs Questionnaire (46) measured perceived burdensomeness ($\alpha = 0.89$). Participants rated each item on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). A sample item is "These days the people in my life would be better off if I were gone." We used the average of all items. The measure demonstrated strong internal consistency ($\alpha = 0.90$).

2.3.3. Asian subgroup

We created a dichotomous variable to categorize our sample into two groups—East AsAm (i.e., referent group) or Southeast/South AsAm. Categorization was based on participant reports on an open-ended ethnicity self-identification question.

2.4. Statistical analysis

We conducted two main analyses. We ran independent-sample *t*-tests to compare the means of campus racial climate and perceived burdensomeness between East AsAm and Southeast/South AsAm groups. Then, we conducted a moderation using model 1 of the PROCESS macro in SPSS v.28 to examine whether the association between campus racial climate and perceived burdensomeness differed among East AsAm or Southeast/South AsAm groups. We included demographic variables that were significantly correlated with the dependent variable as confounding variables to the moderation.

3. Results

3.1. Descriptive statistics

The sample for this study consisted of 148 (101 women, 42 men, three non-binary, and two who preferred not to say) undergraduate students aged between 18 and 40 years ($M = 20.60$,

$SD = 3.22$). Participants were from a small, predominantly white, Christian, liberal arts institution in the Pacific Northwest region of the United States. Approximately 18.8% of the undergraduate population was of Asian heritage at this predominately white institution, according to demographic information for the 2019–2020 academic year. The means and standard deviations of campus racial climate and perceived burdensomeness are presented in Table 1. Independent-sample t -tests supported no significant group differences between Southeast/South and East Asian groups on reports of campus racial climate ($t_{(146)} = -0.123$, $p = 0.902$) or perceived burdensomeness ($t_{(146)} = -0.645$, $p = 0.520$). The Pearson correlation coefficients demonstrated that campus racial climate was positively correlated with perceived burdensomeness ($r = 0.267$, $p < 0.001$) across the sample. Perceived burdensomeness was positively correlated with gender ($r = 0.242$, $p < 0.01$), but not with age ($r = -0.177$, $p = 0.086$). Among each subgroup, campus racial climate was positively correlated with perceived burdensomeness among Southeast/South Asians ($r = 0.448$, $p < 0.001$) but not among East Asians ($r = 0.093$, $p = 0.426$).

3.2. Moderation analysis

We used model 1 of the PROCESS macro (47) in SPSS v.28 to test the moderation. We used 10,000 bootstrapped samples and mean-centered only the predictor (i.e., an observed, continuous variable campus racial climate) to construct the interaction term with the moderator (i.e., a dichotomous variable Asian subgroup). We identified the Asian subgroup as the moderator to test the effects of campus racial climate on perceived burdensomeness for each subgroup since this ethnic identification is a stable characteristic of participants that precedes their report of campus racial climate (48–50). As shown in Table 2, neither campus racial climate ($b = 0.06$, $t = 0.65$, $p = 0.515$) nor the Asian subgroup ($b = 0.08$, $t = 0.50$, $p = 0.618$) significantly predicted perceived

burdensomeness. However, gender ($b = 0.33$, $t = 2.36$, $p = 0.020$) as a confounding variable significantly predicted perceived burdensomeness. Moreover, the interaction term did ($\Delta R^2 = 0.03$, $b = 0.24$, $t = 2.01$, $p < 0.05$), with a small effect size as well. Specifically, campus racial climate was significantly associated with greater perceived burdensomeness among Southeast/South Asians ($b = 0.29$, $t = 3.48$, $p < 0.001$) but not among East Asians ($b = 0.06$, $t = 0.65$, $p = 0.515$). Figure 1 displays the interaction effect.

4. Discussion

The present study is one of the few to focus on the impact of campus racial climate on the mental health of AsAm college students. Given the increase in anti-Asian racism during the COVID-19 pandemic and the prevalence of suicide among AsAm young adults, we examined how perceived campus racial climate during the pandemic was associated with a suicide risk factor among AsAm college students. Contrary to our hypothesis, campus racial climate was not associated with perceived burdensomeness across the whole sample. Furthermore, the study empirically tested the interaction effect of Asian ethnic subgroup identification and campus racial climate on perceived burdensomeness. We found that campus racial climate was associated with greater perceived burdensomeness, a suicide risk factor, only among Southeast and South AsAm undergraduate students. There was no association between the two variables among AsAm students categorized as East Asian. The results provide empirical evidence that disaggregation of AsAm data was significant in understanding the detrimental effects of anti-Asian racism on the mental health of college students.

When conceptualizing campus racial climate as a report of racial discrimination, this study adds to the existing literature on the negative effects of perceived discrimination among AsAm students and the significance of suicide risk in this population. Moreover, this relationship was uncovered only when examining

TABLE 1 Means and standard deviations by Asian subgroup and total sample.

	Southeast/South Asian ($n = 73$) M (SD)	East Asian ($n = 75$) M (SD)	Total sample ($n = 138$) M (SD)
Campus racial climate	2.90 ^a (1.38)	2.88 ^a (1.34)	2.89 (1.36)
Perceived burdensomeness	2.65 ^a (1.01)	2.54 ^a (1.05)	2.60 (1.03)

Means with similar superscripts denote means are not statistically different.

TABLE 2 Interaction of Asian subgroup and campus racial climate on perceived burdensomeness.

Variables	B	SE	95% CI	t
Constant	1.97***	0.27	1.44, 2.50	7.38
Gender	0.33	0.14	0.05, 0.61	2.36
Campus Racial Climate	0.06	0.08	-0.11, 0.22	0.65
Asian subgroup (0 = East)	0.08	0.16	-0.24, 0.40	0.50
Racial climate \times Asian subgroup	0.24*	0.12	0.00, 0.47	2.01

$R^2 = 0.14^{***}$.

CI, confidence interval based on 10,000 bootstrapped estimates.

* $p < 0.05$.

*** $p < 0.001$.

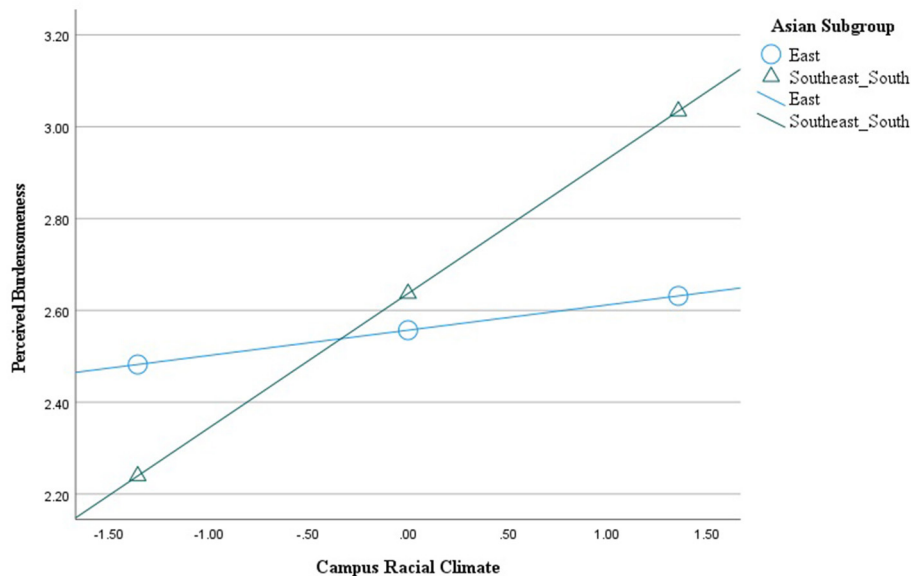


FIGURE 1

Asian subgroup interacting with the effect of campus racial climate on perceived burdensomeness.

Asian ethnic subgroups compared to an aggregated AsAm sample. This is significant since perceived burdensomeness is a double bind for AsAm, a factor that both increases the desire for suicide and decreases the willingness to seek professional mental health help (31). This finding is contradictory to a previous study where no statistical difference among subgroups served as a justification to combine all Asian subgroups together (51).

Among AsAm college students categorized as Southeast and South Asian, our results converge with previous literature on pernicious racial experiences. Moreover, the results strengthen the association between discrimination with perceived burdensomeness in general [e.g., other studies have found similar effects of racial microaggressions among African Americans (52) and weight-based discrimination among community-dwelling adults (53)]. Park et al. (19) found that perceived discrimination was more impactful on South Asian college students' adjustment than East Asians. This is similar to findings among AsAm adults, for whom perceived discrimination is negatively correlated to life satisfaction only among Vietnamese and Asian Indians (31) and for Filipinos who report higher levels of discrimination than Chinese and Vietnamese adults (54). Though discrimination is not exclusive to certain Asian ethnic subgroups, there is evidence of differences.

However, there is a need to further explore the reasons for these differences. Park et al. (19) theorized that South Asian students are more impacted by perceived discrimination, possibly due to greater racial profiling based on phenotypical characteristics. The intersection of racism and race-based discrimination, along with colorism and skin color-based discrimination, may be the reason why Southeast and South Asian students are targeted (55). The overlapping systems of racism and colorism that oppress these AsAm students based on race and skin color may underlie the negative racial experiences they perceive on campus.

Beyond everyday discrimination, Southeast and South Asians have a complex and diverse history of migration and trauma, including war, colonization, displacement, and resettlement [e.g., the Vietnam War and colonization in the Philippines (54)]. Finally, Huynh (56) analyzed a distinct domain of interethnic and intraethnic racism among second-generation Vietnamese in Southern California based on "presumed hierarchies of desirability" (p. 135). Overall, the detriment of a poor campus racial climate appears salient among these students due to the various types of racism that impact their lived experiences. As a result, it appears that negative racial experiences on campus, which are often interpersonal experiences with other students and faculty, can lead to viewing oneself as a burden on others.

Campus racial climate did not predict perceived burdensomeness among East Asian students in this study, even though Asian ethnic subgroups reported similar levels of campus racial climate and perceived burdensomeness. We hypothesized that this association would be significant due to Sinophobia and the return of the "yellow peril" (57, 58). It is unclear why this might be the case, and there is limited literature on these associations using disaggregated sample data gathered from AsAm students. Here, we offer a few theoretical conceptualizations and limitations of this study as possible explanations. The disconnect between negative racial experiences on campus and perceived burdensomeness among East Asians could be related to differences in racialized backgrounds. For instance, Museus and Truong (43) examined the perceptions of campus racial climate among AsAm college students from predominantly white high schools and predominantly racial minority high schools. Qualitative analyses demonstrated that students from predominantly white high schools reported more positive appraisals of campus climate, less stress due to racial prejudice and discrimination, and tended to downplay or rationalize racial stereotypes. Asian ethnic subgroup information

was not provided to study participants, yet this supports the notion that high school background is one factor underlying the complex and diverse lived experience of AsAm students. Other protective factors of racism-related stress include older generation status (32) and both independent and interdependent self-construal (20). Future studies could examine these possible protective factors. There are limitations of this study as well. Of note is the use of campus racial climate as the only measure of racism-related stressors and racial discrimination. Since there are many forms of racism that were not observed in this study, perhaps other types of racism would predict perceived burdensomeness. Overall, there is a need for further investigation on the impact of campus racial climate among AsAm students whether across Asian ethnic subgroups or within ethnic subgroups.

Having interpreted the results of this study, we acknowledge the limitations. First, we categorized students of Southeast and South Asian ethnicities into one group, though our study promotes disaggregation of data. Due to limitations in recruitment and sample size, we focused on contrasting East Asians with Southeast and South Asians for this study. Future research could target recruitment to maximize each subgroup and illuminate greater complexity and diversity within the AsAm population. Second, only undergraduate students were included in this study. Since graduate students could also be in the young adult age group and thus have a high risk for taking their own life, follow-up studies could be significant to understand how campus racial climate impacts them. Next, the sample was unrepresentative of AsAm students across higher education in the United States. Due to the sample size and institutional characteristics, these findings are limited in generalizability. The effects of campus racial climate among AsAm college students in other institutional settings may be different if AsAm students are racially minoritized or in the majority. Fourth, we were unable to posit causal relationships since our study was cross-sectional. Data before and after the pandemic could be interesting to look at changes in levels of campus racial climate and perceived burdensomeness, especially related to how institutions and leadership intervene. Nevertheless, we considered Asian ethnic subgroup identification as the moderator in our model due to its stable and consistent quality as opposed to the campus racial climate. Finally, we only measured campus racial climate without considering its additive effect on top of the general campus climate. Future studies could clarify the unique effect of campus racial climate, above and beyond general campus climate, on mental health risk factors.

Despite these limitations, we identify the implications of our study. There is a need for higher education institutions to consider tailoring interventions and tools that fit into the heterogeneous cultural, historical, and sociopolitical experiences of ethnic and regional subgroups among AsAm students. In developing campus interventions for students, it is important to disaggregate data from AsAm students and consider differing immigration patterns among AsAm regional subgroups, such as among the commonly designated subgroups of East Asian, Southeast Asian, South Asian, and Filipino (59). For example, forced migration among refugees within the Southeast Asian communities or the impact of Spanish and U.S. colonialism on Filipino Americans has led to unique experiences with race

and racism among these subgroups (59). Furthermore, it is imperative to create targeted interventions—such as a revised curriculum, cultural competency training, and campus events—that acknowledge the distinct racialized campus experiences between AsAm students from different regional subgroups. In addition, the creation of AsAm ethnic or regional subgroup-specific student organizations and institutional spaces could help improve the racial campus climate for these students and serve as a buffer against mental health difficulties (60, 61). Institutions are strongly urged to allot additional resources or partner with other universities to create supportive spaces for AsAm students who face barriers to accessing shared ethnic communities due to lower campus representation. Finally, it is important to consider how ethnic identity intersects with other dimensions of identity (e.g., gender, sexuality, class, and immigration status) among AsAm students to influence their racialized campus experience and mental health (42, 59). Institutional resources and support are crucial for AsAm college students to cocreate counterspaces where they can tell their counterstories (56) as active authors of their lives amid anti-Asian racism. Here, they could feel as though they are not a burden to others but could help empower advocacy for one another and themselves (62).

In summary, the present study provides empirical support for and adds to the existing literature on disaggregating Asian American data. Campus racial climate was associated with perceived burdensomeness, a suicide risk factor, for Southeast and South Asian American college students but not for East Asian American students. This interaction effect was found even though there were no group differences in these outcomes. Therefore, we acknowledge the complexity and diversity across Asian American communities and that we are #notthesame.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving human participants were reviewed and approved by Peter Rivera, PhD; Seattle Pacific University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

JJ: conceptualization, methodology, investigation, formal analysis, original draft, review, editing, and supervision. VZ: data curation, formal analysis, investigation, original draft, review, and editing. TT: data curation, formal analysis, visualization, and original draft. EI: interpretation of data and an original draft. All authors provided substantial contributions to the study, drafted critical content, provided final approval, and agreed to be accountable for the study.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Anti-Asian racism related stigma, racial discrimination, and protective factors against stigma: a repeated cross-sectional survey among university students during the COVID-19 pandemic

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Background: Since the onset of the COVID-19 pandemic in March 2020, reports of anti-Asian American or Pacific Islander (AAPI) hate have increased in the United States. Institutions of higher education provide a unique opportunity to examine COVID-19 related stigma and protective factors in AAPI young adults enrolled in college.

Objective: The goal of this research was to examine COVID-19 related stigma among a diverse college student population. We posited that AAPI students experience more racial discrimination, internalized stigma, and/or anticipated racial discrimination than other students. We also sought to identify protective behavioral factors against stigma.

Methods: This study includes data from a repeated cross-sectional survey that was administered among college students at a large public university in the United States in April ($n=1,359$) and November 2020 ($n=1,196$). All university enrolled students with an active email account were eligible to participate in the online survey, which included questions about COVID-19 stigma (anticipated, enacted, internalized), stigma resistance, sources of COVID-19 information, lifestyle behaviors, and sociodemographic information. Binary logistic regression models were utilized to assess differences in stigma between race and ethnic groups and to identify factors associated with stigma.

Results: AAPI students were more likely to experience all three types of stigma compared to other race and ethnic groups. AAPI students in both waves were at least 2 times more likely to experience enacted stigma and 7.3 times more likely to experience anticipated stigma in the earlier wave compared to non-Hispanic

White students. Students who had experienced enacted stigma were more likely to experience anticipated stigma, and those who experienced enacted and anticipated stigma were more likely to experience internalized stigma. Higher education level, living with neighbors/roommates, maintaining a healthy lifestyle, and thinking positively about oneself may act as protective factors against different types of stigma.

Conclusion: AAPI students have a greater risk of experiencing COVID-19 stigma compared to those from other race and ethnic groups. Universities should combat anti-AAPI sentiments and COVID-19 stigma and promote public health efforts to build resistance against the negative effects of stigma.

KEYWORDS

COVID-19, anti-Asian racism, anti-AAPI racism, stigma, mental health, college students, COVID-19 stigma among Asian students

Introduction

Since the onset of the COVID-19 pandemic in March 2020, reports of anti-Asian American or Pacific Islander (AAPI) hate have increased in the United States (U.S.) According to the national coalition Stop AAPI Hate, 11,500 anti-AAPI hate incidents were reported across the U.S. between March 2020 and March 2022 (1). These incidents included hateful tirades, online abuse, refusal of services, shunning, physical assault, property damage, and robbery, with 67% of reported incidents involving harassment such as verbal or written hate speech or inappropriate gestures (1). In the COVID-19 Effects on the Mental and Physical Health of AAPI Survey Study (COMPASS), 60% of respondents reported experiencing discrimination within the first year of the pandemic (2), and 74% agreed with at least one COVID-19 related racial bias belief (3). Discrimination is closely linked with stigma, as the interplay between harmful stereotypes and structural power dynamics can lead to the othering of individuals or entire groups of people (4). As with other previous infectious disease outbreaks (e.g., HIV, tuberculosis, Zika), stigma emerged during the COVID-19 pandemic (4).

COVID-19 stigma initially manifested towards individuals from Wuhan, China but was subsequently generalized in varying intensity to others, most specifically among those of AAPI descent (5, 6). Initial COVID-19 stigmatization of AAPI individuals was often exacerbated by misinformation and anti-AAPI sentiments perpetuated by the media and government leadership (7). Individuals reporting discrimination in COMPASS included those of Hmong, Chinese, Korean, Filipino, Japanese, Vietnamese, Asian, Indian, and Native Hawaiian and Pacific Islander descent (2). In another national survey assessing self-reported COVID-19 related racial and ethnic discrimination, Chinese, Korean, Japanese, Vietnamese, and other AAPI individuals were almost four times more likely to experience COVID-19 related discrimination compared to White individuals (8).

Stigma is a persistent and critical public health issue that stems from a lack of understanding, misleading or inaccurate information, and stereotypes (9). The concept of stigma has evolved over time and operates on the individual, interpersonal, and population levels (9). At the individual level, stigma can be internalized if an individual agrees with others' negative beliefs related to their identity or participation within a group perceived to be at greater risk of transmitting COVID-19. Internalized stigma can lead to greater emotional, mental, and

physical health consequences including shame, lower self-esteem, fear, anxiety, depression, and suicidal ideation (10, 11). Stigma may also be anticipated, meaning an individual fears future stigmatization or discrimination because of this attribute, which can also have a negative effect on wellbeing (12). Additionally, anticipated stigma can occur whether or not one is actually exposed to stigma (12, 13). Although stigma can lead to negative mental, emotional, and physical outcomes, one may be exposed to stigma but avoid the associated negative outcomes due to protective factors that increase stigma resistance. Stigma resistance is the ability to use one's own knowledge, experiences, and skills to fight stigma at the personal, peer, or public level (14–16).

A growing body of research focuses on examining the experiences of the AAPI community during the COVID-19 pandemic and the negative effect that COVID-19 related racial discrimination and stigma have had on mental health and wellbeing (2, 17, 18). One early study on self-reported racial discrimination among AAPI individuals found a 30% increase in reported discrimination around the pandemic, with 40% of respondents reporting an increase in anxiety, depressive symptoms, and sleep difficulties (19). In a survey of Chinese families living in the U.S., symptoms of anxiety and poorer psychological wellbeing were associated with experiences of racial discrimination related to COVID-19 among both parents and their children (20).

The young adult AAPI community may be particularly vulnerable to the deleterious effects of COVID-19 on mental health and well-being. Among young adults identifying as racial and ethnic minorities, COVID-19-related stigma could be an under-examined predictor of increasing rates of anxiety and depression (21). In the U.S., recent levels of anxiety and depression have risen with 42% of young adults aged 18–29 reporting anxiety and 36% reporting depression (22). Levels of suicidal ideation in young adults are similarly rising, notably more prevalent among males than females, as are reports of substance use, which is often used to cope with seemingly overwhelming stressors (22). Among the AAPI population, suicide rates were the highest in adolescents and young adults ages 15–24 and 25–34 (23). AAPI individuals are also less likely to seek mental health services due to lack of access to care, perceived need, and mental health stigma (24–26). Using data from the California Health Interview Survey (CHIS), researchers found that, among AAPI individuals, experiencing or witnessing COVID-19 related hate caused serious psychological distress and that these experiences were concentrated in the younger population (27).

Of the publications that specifically examine the experiences of COVID-19 stigma among AAPI populations, few examine the protective factors against stigma among young AAPI adults or college students in the U.S. One study found that those with lower educational levels are more likely to experience infectious disease related to enacted or perceived public stigma, including COVID-19 related stigma. This association may be due to the relationship between education level and the ability to identify misinformation (28). Another study identified social support as a critical factor associated with increased resilience to stigma (19).

Institutions of higher education provide a unique opportunity to examine COVID-19 related stigma in young adults enrolled in college. While data exist suggesting AAPI populations may experience increased COVID-19 stigma, less is known about the experience of the AAPI student population as well as the experience of other college groups related to COVID-19 stigma. Given the significant race and ethnic disparities that emerged early in the pandemic, it is possible that other student populations may have experienced COVID-19 related stigma as well. Finally, a scarcity of data exists around factors associated with COVID-19 resilience. The goal of this research was to examine COVID-19 related stigma among a diverse college student population. We posit that AAPI students experience more racial discrimination (enacted stigma), internalized stigma, and/or anticipated racial discrimination (anticipated stigma) compared to other students. We also sought to identify behavioral factors associated with anticipated stigma and to identify which factors act as protective mechanisms against internalized stigma related to COVID-19.

Materials and methods

Setting and population

This study was conducted at a large public research university located on the West Coast of the U.S. This university is a Minority Serving Institution, designated as both an Asian American and Native American Pacific Islander-Serving Institution and a Hispanic-Serving Institution. In fall 2019, the university's population comprised 36,303 students who identified as AAPI (36%), Hispanic (22%), international (19%), White (16%), African American (3%), and unknown/did not identify (3%). Among those who reported being international students, the top sending countries included China (74%), India (6%), and South Korea (4%). Approximately 79% of those enrolled were undergraduates, and almost half of those undergraduates (47%) were first generation college students (29).

Data collection

In late January 2020, university leadership began to make plans in preparation for COVID-19 on campus. To better understand health behaviors, we developed a campus wide survey to gauge students' concerns regarding the COVID-19 virus, understanding of disease transmission, use of protective health behaviors, and sources of COVID-19 information. In a pilot test with students, the survey took approximately 10–15 min to complete. We administered an anonymous, repeated cross-sectional survey, with a total of four survey waves. (See Figure 1 for timeline).

We initiated the Wave I survey in February 2020. Starting with the Wave III survey in April 2020, we enhanced the survey questions and added questions about mental health, healthy coping mechanisms, and COVID-19 stigma. We administered the Wave IV survey in November 2020. Thus, we include only results from Wave III and IV surveys in these analyses related to understanding COVID-19 related stigma among a college student population. This study was certified as exempt (Category 2) from ethical approval using a self-determination form provided by the university's Institutional Review Board (IRB).

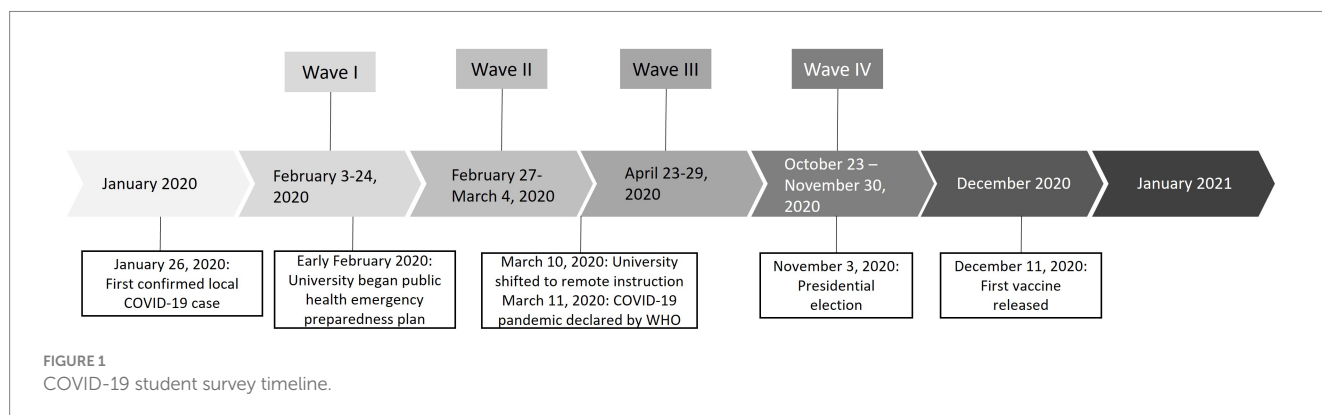
Recruitment and sample

All university enrolled students with an active email account during the study period were eligible and invited to participate in the online survey via their university email. Those who completed the survey were entered in a raffle to win a \$50 gift card for a food delivery app. Approximately 31,000 surveys were sent out in each of Waves III and IV, and 2,272 and 1,611 students completed the surveys, respectively. However, 913 responses from Wave III and 415 responses from Wave IV were excluded from analysis due to incomplete submissions.

Outcome variables

This study has three key stigma outcome variables: enacted stigma (experience of overt discrimination), anticipated stigma (fear of future stigmatization), and internalized stigma (agreement with others' negative beliefs about one's identity). We adapted items from the HIV/AIDS Stigma Instrument for People Living with AIDS (HASI-P) (30) for the context of COVID-19 to measure these different types of stigma. HASI-P was previously adapted by the authors (31) and is often adapted for various stigmatized health conditions (32, 33). For *enacted stigma*, we asked respondents to report how often they had experienced being mocked, having friendships dissolve, feeling verbally abused, or being avoided because of others' perceptions of the respondent's racial identity or perceived racial identity and their risk of transmitting COVID-19 to others within the past month. For *anticipated stigma*, we asked respondents to report how often they believed they would be mocked, have friendships dissolve, experience verbal abuse, or be avoided because of others' perceptions of the respondent's racial identity or perceived racial identity and their risk of transmitting COVID-19 to others within the next month. For *internalized stigma*, we asked respondents to report if they ever felt ashamed or worthless because of others' perceptions of their racial identity and their risk of transmitting COVID-19 to others. Response options for enacted, anticipated, and internalized stigma questions included "most of the time," "several times," "once or twice," and "never."

Stigma resistance was measured based on the activity type: (1) protective health behaviors to resist stigma and (2) actions to resist/address stigma at the personal, peer, and public level. Students were asked how often they participated in protective health behaviors and how much they agreed with statements about resisting and addressing COVID-19 stigma; these items were adapted from the Stigma Resistance Scale (16). These survey items were divided into 3 sets of questions: protective behaviors, stigma resistance activities, and stigma addressing activities.



Covariates

Socio-demographic characteristics include age (in years); gender (male/female/transgender female/transgender male/gender non-conforming/not listed/prefer not to answer); education (undergraduate/graduate); race (select all that apply: American Indian or Alaska Native/Asian/Black or African American/Native Hawaiian or Other Pacific Islander/White/Other); ethnicity (Hispanic or Latinx/not Hispanic or Latinx); occupation (full-time employed/part-time employed/unemployed); residence (urban/rural); and household membership (select all that apply: living alone/significant other/partner or spouse/parent(s)/your child or children/sibling(s) (brothers or sisters)/extended family/neighbor(s)/ friend(s)/roommate(s)—not family or friend). Gender was collapsed as a binary indicator for females and non-females. Although recent research shows that transgender and non-binary individuals are more susceptible to depression and other negative health outcomes (34, 35), our sample included few individuals who identified as non-binary or transgender. Therefore, these gender categories were too small for individual analyses. Race and ethnicity were collapsed into AAPI (Asian and Non-Hispanic Pacific Islanders), Hispanic or Latino, Non-Hispanic White, and Other Non-Hispanic (Non-Hispanic Black and Non-Hispanic American Indian). Any student who identified as “Asian” was categorized as AAPI, as we were missing data on AAPI subcategories. Non-Hispanic Black and Non-Hispanic American Indian was collapsed into Other Non-Hispanic due to the small number of observations. Living situation was categorized as living alone, living with family, living with friends, and living with neighbors/roommates. Employment was collapsed into two categories: not employed or employed (part-time or full-time). Students were asked about their sources of COVID-19 information which included news media, social media (university or non-university), podcasts (university or non-university), government websites, university websites, friends and family, and emails from the university (36).

Statistical analysis

Descriptive statistics were calculated to summarize the survey respondents by waves and demographic variables. We assessed the impact of missing data using the chi-square test of homogeneity to examine if the distribution of observations with missing race and ethnicity was significantly different from observations with race and ethnicity across different demographic and outcome variables (Supplementary Table S1). Those with missing race and ethnicity

observations were categorized as “Missing” for their race and ethnicity category to maintain their inclusion in the analyses.

Racial differences in stigma were estimated using binary logistic regression models comparing any frequency of stigma to no stigma. Odds of enacted, anticipated, and internalized stigma were separately estimated in unadjusted models as no confounders were identified in our Directed Acyclic Graphs (DAGs) (37) based on existing literature for each type of stigma (Supplementary Figures S2–S4). Separate DAGs were used to identify confounders of anticipated stigma (Supplementary Figure S5) and internalized stigma (Supplementary Figure S6). Supplementary Figure S5 illustrates how demographic, socio-economic, social environmental factors, media consumption, stigma resistance, and protective health behaviors are associated with anticipated stigma, and we then tested for multicollinearity. Final model covariates for the odds of anticipated stigma were enacted stigma, age, gender, race and ethnicity, education, employment, rural/urban status, the people participants lived with, media source of COVID-19 information, daily protective health behaviors for stigma, stigma addressing activities, and stigma resistance activities.

Supplementary Figure S6 includes demographic, socio-economic, social environmental factors and media use, stigma resistance, and protective health behaviors as confounders of the race and ethnicity internalized stigma association. It is worth noting that anticipated stigma is included as a covariate, since anticipated stigma can lead to internalized stigma (11, 12).

All analyses were run via SAS 9.4 (SAS Institute, Cary NC.) All regression results are presented as odds ratios and their corresponding 95% confidence intervals (CI).

Results

Descriptive statistics

A total of 1,359 and 1,196 student responses were included in Waves III and IV, respectively. The mean age of participants in Wave III was 22.59 years old ($SD = 5.28$; median age of 21 years), and the mean age of participants in Wave IV was 22.18 years ($SD = 5.00$; median age of 21 years) (Table 1). Most participants were female (Wave III: 68.73%, Wave IV: 69.98%), undergraduate (Wave III: 74.17%, Wave IV: 69.73%), and were not employed (Wave III: 59.90%, Wave IV: 55.94%). The majority of students identified as AAPI (Wave III: 39.00%, Wave IV: 45.40%), Hispanic or Latino (Wave III: 21.34%,

TABLE 1 Descriptive summary by waves.

Variables	Wave III (<i>n</i> = 1,359)		Wave IV (<i>n</i> = 1,196)	
Race	<i>N</i>	%	<i>N</i>	%
Asian and Pacific Islander (AAPI)	530	(39.00%)	543	(45.40%)
Hispanic or Latinx	290	(21.34%)	254	(21.24%)
Other Non-Hispanic	35	(2.58%)	32	(2.68%)
Non-Hispanic White	280	(20.60%)	301	(25.17%)
Missing	224	(16.48%)	66	(5.52%)
Gender				
Male	425	(31.27%)	359	(30.02%)
Female	934	(68.73%)	837	(69.98%)
Education				
Undergraduate	1,008	(74.17%)	834	(69.73%)
Graduate	344	(25.31%)	360	(30.10%)
Missing	7	(0.52%)	2	(0.17%)
Employment status				
Employed	545	(40.10%)	527	(44.06%)
Unemployed	814	(59.90%)	669	(55.94%)
Age				
Mean	22.59		22.18	
Median	21.00		21.00	
Standard deviation	5.28		5.00	
Outcome variables				
Enacted stigma	169	(12.44%)	121	(10.12%)
Anticipated stigma	380	(27.96%)	194	(16.22%)
Internalized stigma	197	(14.50%)	153	(12.79%)

Wave IV: 21.24%), or non-Hispanic White (NHW) (Wave III: 20.60%, Wave IV: 25.17%). A smaller proportion of students identified as “Other Non-Hispanic” (Wave III: 2.58%, Wave IV: 2.68%) (Table 1). These self-identified race and ethnic distributions are consistent with the university’s current enrollment demographics. Race and ethnicity data were missing for 16.48% of Wave III and 5.52% of Wave IV.

Binary logistic regression results

Overall, the prevalence of any type of stigma was observed in 493 out of 1,359 (36.28%) participants in Wave III and 284 out of 1,196 (23.75%) participants in Wave IV, both representing a significant percentage of respondents. In terms of stigma subtypes, the prevalence of enacted stigma was 12.44% in Wave III (*n* = 169) and 10.12% in Wave IV (*n* = 121). Anticipated stigma was reported by 27.96% (*n* = 380) of participants in Wave III and 16.22% (*n* = 194) of participants in Wave IV. Internalized stigma was reported by 14.50% and 12.79% of the participants in Waves III and IV, respectively.

AAPI respondents reported all three types of stigma significantly more than other race and ethnic groups for both waves; however, this trend decreased from Wave III to Wave IV (Table 2). In Model 1,

AAPI students were over 2 times more likely to experience enacted stigma compared to NHW [Wave III: OR 2.6 (95% CI: 1.56–4.31); Wave IV: OR 2.1 (95% CI: 1.23–2.55)]. Similarly, AAPI students were also 7.3 times more likely to experience anticipated stigma compared to NHW (95% CI: 4.72–11.35) in Wave III and 4.1 times more likely (95% CI: 2.53–6.68) in Wave IV. Other Non-Hispanic participants also had significantly higher odds of experiencing anticipated stigma compared to NHW in both Waves (Wave III: aOR = 3.4; 95% CI: 1.43–7.98; Wave IV: aOR = 4.4; 95% CI: 1.78–11.09). Additionally, AAPI students were the only ones to experience more internalized stigma compared to NHW in both Wave III (aOR = 1.62; 95% CI: 1.05–2.51) and Wave IV (aOR = 1.58; 95% CI: 1.02–2.47).

After adjusting for demographic (age and gender), social (education, residence, and employment), environmental (living situation), and behavioral factors (source of COVID-19 information; protective health behaviors to resist stigma; and actions to resist/address stigma at the personal, peer, and public level), race and ethnicity remained significantly associated with anticipated stigma (Table 3). In models 4 and 5, all covariates remained as there was no multicollinearity among variables (Supplementary Table S2). These adjusted models also demonstrate that students who experienced enacted stigma were 40–50 times more likely (Wave III, 95% CI: 18.05–82.79; Wave IV, 95% CI: 24.21–111.18) to experience anticipated stigma compared with those who did not experience enacted stigma. Students who reported agreement with the statement “Resisting stigma means speaking up when others say negative things about Asians or Asian Americans regarding COVID-19” were more likely to experience anticipated stigma (aOR = 2.38; 95% CI: 1.12–5.03) in Wave III.

Race and ethnicity were not associated with internalized stigma in the adjusted Model 5 (Table 4). However both enacted stigma [Wave III (aOR = 3.39; 95% CI: 1.87–6.14); Wave IV (aOR = 4.98; 95% CI: 2.44–10.19)] and anticipated stigma [Wave III (aOR = 2.72; 95% CI: 1.59–4.64); Wave IV (aOR = 3.33; 95% CI: 1.72–6.47)] were significantly associated with higher odds of experiencing internalized stigma when controlling for the other covariates. These associations were of higher magnitude in Wave IV.

A number of protective factors were associated with decreased internalized stigma including graduate education level, living with roommates or neighbors in university mandated “pod” cohorts (i.e., groups of students who lived, ate, and socialized exclusively with each other), and positive self-thought. Compared to undergraduate students, being a graduate student was associated with a lower risk of internalized stigma in Wave III (aOR = 0.37; 95% CI: 0.15–0.91) but not in Wave IV. In both waves, participants living within university mandated “pod” cohorts were less likely to experience internalized stigma compared to those who did not, and this finding was significant in Wave IV (aOR = 0.25; 95% CI: 0.07–0.83). However, those who lived with friends in Wave III (aOR = 2.96; 95% CI: 1.10–7.97) were more likely to experience internalized stigma. Students who reported agreement with the statement “To resist stigma, I think positive things about myself” were two times less likely to experience internalized stigma compared to those who did not (aOR = 0.48; 95% CI: 0.27–0.85).

Behaviors associated with less anticipated stigma included maintaining a healthy lifestyle (aOR = 0.27; 95% CI: 0.13–0.59).

See Supplementary Tables S3, S4 for further results.

TABLE 2 Binary logistic regression results of race and ethnic differences in enacted, anticipated, and internalized stigma by survey wave.

Variables	Wave III		Wave IV	
	aOR	95% CI	aOR	95% CI
Outcome: enacted stigma				
Race				
Asian and Pacific Islander (AAPI)	2.59**	(1.56, 4.31)	2.09**	(1.23, 2.55)
Hispanic or Latinx	0.86	(0.45, 1.66)	1.77	(0.96, 3.26)
Other Non-Hispanic	2.69	(1.00, 7.24)	2.12	(0.67, 6.67)
Missing	2.57**	(1.45, 4.57)	0.96	(0.32, 2.91)
Non-Hispanic White	Reference	Reference	Reference	Reference
Outcome: anticipated stigma				
Race				
Asian and Pacific Islander (AAPI)	7.32**	(4.72, 11.35)	4.11**	(2.53, 6.68)
Hispanic or Latinx	0.96	(0.54, 1.71)	1.72	(0.95, 3.09)
Other Non-Hispanic	3.38**	(1.43, 7.98)	4.44**	(1.78, 11.09)
Missing	6.81**	(4.19, 11.04)	1.84	(0.78, 4.35)
Non-Hispanic White	Reference	Reference	Reference	Reference
Outcome: internalized stigma				
Race				
Asian and Pacific Islander (AAPI)	1.62*	(1.05, 2.51)	1.58*	(1.02, 2.47)
Hispanic or Latinx	1.21	(0.73, 2.01)	1.16	(0.68, 1.99)
Other Non-Hispanic	1.34	(0.48, 3.70)	1.67	(0.60, 4.67)
Missing	1.44	(0.85, 2.42)	1.25	(0.54, 2.86)
Non-Hispanic White	Reference	Reference	Reference	Reference

* $p < 0.05$, ** $p < 0.01$; any student who included “Asian” as one of their races was categorized as AAPI; Other Non-Hispanic includes Non-Hispanic Black and Non-Hispanic American Indian; Non-Hispanic White is the reference group; Stigma indicators were coded as binary variables (1 = participants selected most of the time, several times, or once/twice; 0 = never).

TABLE 3 Logistic regression results of sociodemographic, social environmental, and behavioral factors associated with anticipated stigma by wave.

Variables	Wave III		Wave IV	
	aOR	95% CI	aOR	95% CI
Enacted stigma	38.66**	(18.05, 82.79)	51.88**	(24.21, 111.18)
Race: Asian and Pacific Islander (AAPI)	7.50**	(3.72, 15.15)	7.06**	(2.79, 17.91)
Race: Non-Hispanic Others	2.58	(0.58, 11.48)	12.98*	(2.43, 69.39)
Race: missing	7.68**	(3.55, 16.63)	1.48	(0.27, 8.17)
Race: Non-Hispanic White	Reference	Reference	Reference	Reference
Limiting your news consumption to sources considered reliable (meaning with accurate and timely public health information regarding COVID-19)	1.00	(0.53, 1.88)	3.59*	(1.09, 11.83)
Maintaining a healthy lifestyle: getting enough sleep, eating well, exercising, avoiding excessive alcohol or drugs	0.92	(0.49, 1.70)	0.27*	(0.13, 0.59)
Resisting stigma means speaking up when others say negative things about AAPI regarding COVID-19	2.38*	(1.12, 5.03)	0.51	(0.20, 1.31)

* $p < 0.05$, ** $p < 0.01$; only significant variables are shown on this table; the full table is shown on [Supplementary Table S3](#).

Discussion

This study is one of the first to describe COVID-19 stigma and stigma subtypes among young adult students in a university setting with an emphasis on understanding stigma through the lens of AAPI

students. While COVID-19 stigma was experienced broadly across the student population, enacted, anticipated and internalized stigma were significantly greater among students identifying as AAPI. This study contributes meaningfully to a growing body of research on COVID-19 stigma and the AAPI experience; adds to the literature on

TABLE 4 Logistic regression results of demographic, social, environmental, and behavioral factors associated with internalized stigma by wave.

Variables	Wave III		Wave IV	
	aOR	95% CI	aOR	95% CI
Enacted stigma	3.39**	(1.87, 6.14)	4.98**	(2.44, 10.19)
Anticipated stigma	2.72**	(1.59, 4.64)	3.33**	(1.72, 6.47)
Graduate student	0.37*	(0.15, 0.91)	0.76	(0.30, 1.93)
Live with roommates or neighbors	0.76	(0.29, 2.01)	0.25*	(0.07, 0.83)
Live with friends	2.96*	(1.10, 7.97)	0.60	(0.18, 1.96)
Using telehealth options (phone-based or online) for therapy	1.14	(0.64, 2.05)	1.93*	(1.05, 3.55)
To resist stigma, I think positive things about myself	0.64	(0.39, 1.06)	0.48*	(0.27, 0.85)

* $p < 0.05$, ** $p < 0.01$; only significant variables are shown on this table; the full table is shown on [Supplementary Table S4](#).

young AAPI adults; and includes new knowledge on the identification of protective factors against COVID-19 stigma.

During the first year of the pandemic, U.S. leadership evoked anti-AAPI sentiments through comments that associated both place and origin of COVID-19 outbreaks with the AAPI population, resulting in stigma and increased reports of anti-AAPI racial discrimination. In a survey of U.S. residents during the pandemic, 40% of respondents reported that they would engage in at least one discriminatory behavior toward a person of AAPI descent, and discrimination towards AAPI individuals was also associated with being fearful of COVID-19 and having less accurate knowledge of the virus (38). Our work demonstrates the significant impact of anti-AAPI sentiment on several communities of students but most meaningfully on AAPI students across university settings even in federally designated AAPI-serving institutions of higher education.

Our results reveal that the experience of COVID-19 stigma among AAPI students was consistent across two time points: the early acute pandemic experience in March 2020 and a more sub-acute pandemic experience in November 2020. The early COVID-19 experience can be characterized by an acute population-level state of fear of an unknown virus. During this time, university students transitioned to remote instruction as mandatory stay-at-home orders were put into effect statewide. By November 2020, our university campus, like many others, employed a hybrid education model, and students were more likely to return to living in residence halls or with friends. Despite the increase in scientific knowledge around COVID-19, including significant treatment advances and anticipated vaccines, during the time interval between the two waves, the consistent experience of stigma among AAPI students highlights a bias toward AAPI populations that did not significantly diminish.

A few studies reported that AAPI subgroups may experience more or different stigma than others (1, 8). Our study examined COVID-19 stigma among AAPI students as an aggregate. We were unable to conduct analyses by subgroup because we only captured AAPI student self-identified subgroups in Wave IV and the latter part of Wave III. In the sample that did include AAPI subcategories, the cell numbers for some subgroups were too small to conduct meaningful analyses. In Wave IV, we did find that any AAPI subgroup indicator was associated with enacted or internalized stigma. As for anticipated stigma, however, Filipino and Vietnamese participants were shown to have higher risk compared to other AAPI students (data not shown). This analysis is limited, however, and future studies should look at AAPI subgroups.

While this analysis focuses primarily on AAPI students, our convenience sample included students from other race and ethnic backgrounds. We observed that other self-identified non-Hispanic students also were more likely to experience anticipated stigma compared to NHW students. This collapsed category included American Indian, Alaska Native, Black and African American students. Students in these groups could experience stigma for a number of reasons. For example, early in the pandemic, Black communities were highlighted among those populations with highest rates of severe COVID-19 disease and death in the U.S., which may have enhanced fear and uncertainty and heightened feelings of vulnerability.

Protective factors against stigma

Crucial to informing public health efforts to address stigma among young adults is the identification of associated factors and protective mechanisms which can increase stigma resistance. Our Wave III results indicate that graduate students were less likely to internalize stigma compared to undergraduate students. This finding is consistent with other studies that have reported higher education level as a protective factor against stigma (23–25). For example, older or graduate-level students may be less likely to experience personal stigma related to mental health compared to undergraduate students (39).

Across the different types of stigma, having access to one's social network, such as living with others (40) and having adequate social support (41) can also help protect against the harmful effects of stigma. For instance, social support was found to significantly buffer the effect of COVID-19 related discrimination against depressive symptoms among AAPI individuals (19, 42). In Wave IV of our study, students who lived with neighbors or roommates were less likely to experience internalized stigma. A possible explanation for this finding could be that those who live with others have access to the protective factor of social support. Studies of other infectious and chronic illnesses have shown adequate social support to be a consistent protective factor against depression and poor quality of life due to internalized stigma (43–45). Future research should further examine the effect of adequate social support on COVID-19 stigma and mental health outcomes among young adults.

Our study also identified activities that were associated with a protective effect against stigma, including thinking positively about

oneself (internalized stigma) and maintaining a healthy lifestyle (anticipated stigma). Stigma resistance is an ongoing process (46), and it may be useful for universities to promote behaviors that encourage students to maintain healthy lifestyle behaviors (e.g., eating well, exercising, getting enough sleep) and bolster self-esteem in addition to other COVID-19 risk reduction behaviors (e.g., handwashing, social distancing).

All of the protective factors identified in our results were found to be statistically significant in only one wave of data collection, either Wave III or Wave IV, which may have been impacted by students' changing behaviors, social environments, and living arrangements as we moved from the early acute to subacute pandemic experience.

Other factors

Our study also found that limiting news consumption to reliable sources was positively associated with experiencing anticipated stigma. According to Cultivation Theory, the public may develop ideas about society through their exposures to mass media, and studies have demonstrated that the media might operate as a route of stigma transmission around health-related topics (47, 48). News media resources may contribute to discriminatory beliefs and racial related stigma through selective exposure that leans towards certain beliefs or views (49). Further research should do more causal analyses regarding media exposure and COVID-related stigma to aid university administrators in making policy improvements.

Interestingly, living with friends, using telehealth options for therapy, and agreeing with the statement "Resisting stigma means speaking up when others say negative things about Asians or Asian Americans regarding COVID-19" were found to be associated with experiencing different types of stigma. Future research should conduct longitudinal analyses to disentangle the temporality of these associations.

Limitations

Our study has some limitations. As the design is a repeated cross-sectional survey, it is not possible to comment on temporality or the causality of the relationship between the covariates. Future research should assess trends over time. Furthermore, this survey utilized a convenience sample and did not proportionately sample participants, which may decrease the generalizability. Students responded to the survey waves anonymously, and, given the rapid deployment of the survey as part of the university's acute response to an unprecedented public health crisis on campus, it is possible there was some small overlap in respondents between Waves III and IV. However, we feel that the large sample size helps mitigate any impacts on our analyses.

The dataset features some missingness in the race and ethnicity data due to incomplete submissions. These omissions could be due to survey fatigue (50). Demographic questions were put at the end of the online survey to increase the response rate to questions about COVID-19 knowledge and attitudes at the beginning of the survey but may have led some participants to leave the demographic portion blank. Overall, Wave III was more likely to have missing race and ethnicity data. Between Waves III and IV, we improved the survey design to minimize missing data in subsequent waves by re-ordering

the questions. The survey questions remained the same except for a few questions that were revised or added to Wave IV. For example, the race and ethnicity questions were improved to include AAPI subgroups. However, some literature suggests that AAPI and Hispanic respondents may be less likely to report race on surveys than NHW respondents (51). Further, the survey was administered during a time of heightened alert in which discussion of racism and anti-AAPI sentiment was prevalent in news cycles, and some participants may have intentionally not reported their race and ethnicity for this reason. It is possible that participants may have also intentionally skipped questions relating to stigma. Analysis of the missing data did not have a large impact on the results. Additionally, some measurement errors may exist in our findings. The items utilized to measure COVID-19 stigma resistance were based on existing literature and other existing, validated stigma resistance scales (16), however, this may be a limitation as the questions created were not validated.

Conclusion

Institutions of higher education provide a unique opportunity to examine COVID-19 related stigma in young adults enrolled in college. The organized structure of these institutions also allows for targeted interventions to reduce stigma and enhance resilience. Despite the increased prevalence of COVID-19 stigma, there has been a lack of policies and communication set to protect vulnerable populations during the pandemic. Our results illustrate how young AAPI college students are at increased risk of experiencing stigma. To cultivate a safe campus that is stigma free, colleges should implement culturally targeted, anti-stigma COVID-19 interventions that are informed by anti-racism as well as by mental health stigma interventions that have been previously implemented among college populations (52). Possible interventions can include initiatives to increase awareness about stigma through social media campaigns, campus-wide communications, and events with interactive activities and giveaways to boost student engagement and participation in learning about stigma and how to combat it. Interventions should also leverage the campus's existing resources such as student health centers and counseling centers to provide students with information and resources about COVID-19 and mental health. Additionally, universities should partner with their student organizations, advocacy groups, and cultural organizations to ensure the interventions are student-led and informed by student's experiences, needs, concerns, and questions around COVID-19 stigma (52).

Overall, there has been no meaningful federal public health response (5). We call for nationwide interventions to build resiliency against stigma and mitigate the health and well-being consequences among individuals facing increased discrimination during the COVID-19 pandemic. Policies should be implemented to protect these individuals from further hate, harassment, and violence. In May 2021, Congress passed the federal COVID-19 Hate Crimes Act to begin to address the surge in hate crimes against the AAPI community during the COVID-19 pandemic (53). This act directs the Department of Justice to expedite reviews of hate crimes, creates a hate-crime reporting system, and requires that the Departments of Justice and Health and Human Services raise awareness of hate crimes during the COVID-19 pandemic (53). A need remains for policies aimed at prevention of hate crimes against vulnerable populations during the COVID-19 pandemic and beyond.

Future research should assess trends in COVID-19 stigma throughout this dynamic pandemic. Recent media coverage has highlighted the significant disparities in COVID-19 transmission and severity of outcomes for African American, Hispanic, and Indigenous communities. Public health practitioners, researchers, and policy makers should be responsive to how AAPI and other historically marginalized populations share the stigma burden and plan policy, research, and programs accordingly to understand and address their needs. Importantly, as COVID-19 is likely to become an endemic disease, a long-term plan to build the capacity of individuals and communities to resist COVID-19 stigma should be implemented with support from national funding for COVID-19 and its health consequences.

Data availability statement

Deidentified aggregated data may be made available upon request to the corresponding author. Requests to access the datasets should be directed to ED, edrum@hs.uci.edu.

Ethics statement

This study was certified as exempt from ethical approval using a self-determination form provided by the university's Institutional Review Board (IRB).

Author contributions

BB-A, NR, MR, and ED contributed to the design and implementation of the survey. XD, SG, and JW contributed to the design of the statistical analyses and interpretation of the analyses. NR, MR, ED, DG, XD, and SG contributed to manuscript development. BB-A, MR, NR, JW, ED, XD, SG, DG, BG, and JR

contributed to the revision of the manuscript for intellectual content. ED agreed to be accountable for all aspects of the work to ensure that questions related to the accuracy or integrity of the work are appropriately investigated and resolved, as corresponding author. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fpubh.2023.958932/full#supplementary-material>

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