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ORIGINAL RESEARCH ARTICLE

How We Feel: COVID-19 Pandemic Experiences among Intergenerational Cambodian, Laotian and Vietnamese Americans in San Francisco

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Background: The COVID-19 pandemic has exacerbated many social determinants of health and barriers to health care for Southeast Asian Americans.

Objective: The objective of this study is to understand the impact of the COVID-19 pandemic on Southeast Asian American communities' health care utilization and need for support.

Methods: This cross-sectional, multiple methodology study administered surveys and conducted focus groups with 78 participants (≥14 years) across generations and Cambodian, Laotian, and Vietnamese ethnicity in partnership with the Southeast Asian Development Center in San Francisco, California between July and September 2021.

Results: We identified two themes in health care utilization: 1) language and technology barriers were magnified during the pandemic, while telehealth options increased access options; 2) fear of anti-Asian violence deterred participants from public outings and activities; two themes in the role of community and community centers: 1) intergenerational support facilitated health care access; 2) community centers provided crucial social services; two themes in COVID-19 prevention: COVID-19 safety precautions contributed to interpersonal conflict and financial stress and 2) lack of linguistically accessible COVID-19 information and services posed challenges to COVID-19 testing and vaccination.

Conclusions: Despite the challenges posed by the duality of the COVID-19 pandemic and fear of anti-Asian violence, Southeast Asian Americans persisted with resilience to seek health services with intergenerational support and the guidance of community centers. This highlights the need for further expansion of culturally relevant, linguistically accessible, and trauma-informed health interventions and enhanced support for community-based organizations in advancing health for these underserved populations.

Key Words: COVID-19 ▪ Asian Americans ▪ Southeast Asian Americans ▪ health access ▪ immigrants

The COVID-19 pandemic has drastically impacted vulnerable communities across the world, including Asian Americans, causing many to suffer social, economic, and health consequences during this tumultuous period.[1,2] As of March 2022, the United States has had over 79 million cases and over 976,000 deaths due to COVID-19.[3,4] According to national data, Asian Americans have had some of the lowest number of COVID-19 cases and deaths compared to Hispanic and Black populations.[3,5] However, early reports highlighted that Asian Americans account for almost half of COVID-19 deaths in San Francisco and Chinese Americans are 1.5 times more likely to die from COVID-19 than non-Hispanic Whites in New York City.[6,7] Prior to the COVID-19 pandemic, only 0.17% of funding from the National Institutes of Health for clinical research focused on Asian American, Native Hawaiian, and Pacific Islander participants, highlighting the gap in structural support for Asian American health research that was further widened during the pandemic.[8] The lack of disaggregated COVID-19 data among Asian American ethnic groups at national and local levels has made it difficult to fully understand how the pandemic has impacted the health of this heterogeneous population, leading to the invisibilization of disparities among the Asian American population.[9–11]

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POPULAR SCIENTIFIC SUMMARY

- First-generation participants across ethnicities (Cambodian, Laotian, and Vietnamese) faced similar barriers to health care access and utilization, such as language and technology barriers, compared to differences between ethnic groups.
- During the COVID-19 pandemic, anti-Asian violence and discrimination facilitated fear and anxiety that deterred the behavior and activities of first-generation Southeast Asian Americans.
- Community-based organizations, such as community and cultural centers, provide vital services and support to the Southeast Asian American community by advocating for community needs, providing valuable resources and language support, and disseminating essential information to community members.

The COVID-19 pandemic brought about a concurrent wave of increased discrimination and violence against Asian Americans.[12] From March 2020 to December 2021, there were 10,905 hate incidents against Asian Americans reported to Stop Asian American Pacific Islander Hate, with undoubtedly many more occurrences unreported.[13] The widespread fear due to these increased hate incidents may have deterred Asian Americans from seeking and receiving adequate health care in addition to having profound mental health impacts on Asian Americans.[14,15] The limited studies available report detrimental effects of racial discrimination during the COVID-19 pandemic on self-reported increases in anxiety, depressive symptoms, and sleep difficulties among Asian American participants.[16,17]

Within the Asian American population, Southeast Asian Americans (including Cambodian, Laotian, and Vietnamese) have reported lower health care access and utilization rates, partially due to the lack of linguistically and culturally competent health services.[18,19] Many have endured a history of conflict and violence during the wars and political turmoil in Southeast Asia prior to immigration to the US In the context of being uprooted from their homelands and essentially restarting their lives in the United States, many Southeast Asian Americans faced significant barriers to health care access, such as language and culture, health literacy, health insurance, and immigrant status prior to the COVID-19 pandemic.[18–20]

This community-based research study partnered with a local community organization in the Tenderloin district of San Francisco, California that predominantly serves Cambodian, Laotian, and Vietnamese community members. Therefore, this study sought to understand disparities in health care experiences among Cambodian, Laotian, and Vietnamese Americans in the San Francisco Bay Area during the COVID-19 pandemic. The findings will help guide recommendations for community-based organizations to improve health outcomes of Southeast Asian Americans. We hypothesize that the first-generation participants across each ethnic subgroup will face more challenges in healthcare access compared to second-generation participants due to exacerbations of known barriers, such as language access, while increased racial discrimination and violence towards Asian Americans will perpetuate fear in accessing health care services among all participants.

METHODS

The study utilized a mixed research methodology to investigate community experiences and perceptions towards health care utilization and the impact that fear of anti-Asian violence had on health-seeking behaviors during the COVID-19 pandemic between July and September 2021.

Study design/setting

The study was conducted in the San Francisco Bay Area, a region with a total population of more than 7.7 million people, of which approximately 27% are Asian American.[21] In March 2020, the Bay Area was the first major metropolitan area in the US to enact public health orders against the spread of COVID-19 and has maintained a relatively low record of COVID-19 cases throughout the pandemic compared to other metropolitan areas.[22,23]

We collaborated with the Southeast Asian Development Center, a nonprofit community organization that serves Cambodian, Laotian, and Vietnamese communities in San Francisco Bay Area. Southeast Asian Development Center provides a variety of services, including youth programs, workforce development services, translation services, and basic needs resource navigation. Community leaders of each generational group and ethnicity identified potential participants for the study. We recruited 78 participants based on their age (14 years or older) and self-identification as Cambodian, Laotian, or Vietnamese. The participants were grouped into focus group cohorts by generational status (first-generation, born elsewhere, and immigrated to the US after childhood, or second-generation, born and/or lived primarily in the US since childhood) and by ethnicity (Cambodian, Laotian, or Vietnamese).[24] Participants were offered a gift card as an incentive for study participation. Each participant was limited to participating in one focus group to ensure fair distribution of limited participation incentives to all interested participants.

The study was granted approval by the Stanford University Institutional Review Board (May 12, 2021, #60712). Informed consent was obtained from all

individual participants included in the study, and written informed consent was obtained from parents or guardians of participants who were under 18 years of age.

Survey data collection and analysis

The objectives of the surveys were to obtain descriptive data to characterize study participants and to collect quantitative data about participants' experiences of healthcare access and utilization. Participants completed an anonymous survey in English or in Khmer (Cambodian), Laotian, or Vietnamese with the assistance of a translator. The survey questions were adapted from standardized questionnaires and other published studies and were tested and revised for clarity before administration.[25,26] The survey included questions about participant demographics, health care utilization, and access to COVID-19 testing and vaccination in the last 12 months prior to survey participation (Tables 1 and 2).

Focus group data collection and analysis

The objectives of the semi-structured focus groups were to collect qualitative data on participants' perspectives and experiences on how the COVID-19 pandemic affected their health care access and utilization and the impact that fear of anti-Asian violence had on health-seeking behaviors. The focus groups were conducted in-person or remotely via Zoom based on the pandemic health restrictions, interpretation needs, and preferences of participants, and lasted 30–90 min each. The first-generation focus groups were conducted in-person to offer language interpretation to limited English proficient participants, to address limited technology skills, and to facilitate participant comfort in a familiar community space. The second-generation focus groups were conducted remotely via Zoom to provide increased flexibility and convenience to participants with school, work, or childcare responsibilities. Six first-generation focus groups were conducted in-person at community spaces, while nine of the second-generation focus groups were conducted remotely (Table 3).

The first-generation focus groups were co-facilitated by the lead author of the research study and a community leader from each ethnic community who were fluent in English and Khmer, Lao, or Vietnamese, respectively. The community leader in each first-generation focus group offered live interpretation of focus group questions and responses between the first author (DC) and participants at the in-person focus groups. The second-generation focus groups were facilitated virtually by the first author (DC) of the research study without interpretation as all second-generation participants were fluent in English.

The focus groups were audio recorded, transcribed, and checked for quality and completeness. The codebook utilized for qualitative analysis was developed using both deductive and inductive approaches based on the data and an adapted health services framework and was iteratively refined until the team agreed on the final codebook (Figure 1).[27,28] Themes were then mapped and interpreted. The coding software, Dedoose, was used to organize and facilitate the qualitative analysis process.

Results

Quantitative survey findings

Seventy-eight participants, 47 first-generation participants (16 Cambodian, 16 Laotian, and 15 Vietnamese), and 31 second-generation participants (9 Cambodian, 14 Laotian, and 8 Vietnamese) participated in surveys and focus groups. Participants engaged in the study in English (40%) or with the assistance of Khmer (20%), Lao (20%), and Vietnamese (20%) interpreters.

First-generation participants ranged in age from 35 to 82 years (mean age 63.8 years, SD 11.1 years) (Table 1). The median ages of first-generation participants from each ethnic group were 67 years (Cambodian), 68 years (Laotian), and 61 years (Vietnamese). The average number of years since immigration to the US was 22.9 years (SD 14.6 years). All first-generation participants spoke their origin country's language as their primary language and only 28% of first-generation participants had a self-reported 'well' or 'very well' English proficiency. Sixty-two per cent of first-generation participants rated their current health status as fair or worse (28% poor, 34% fair) (Table 2). Eighty-two per cent of first-generation participants had been tested for COVID-19 at least once, and among those, 21% had tested positive for COVID-19. Ninety-eight per cent had received at least one COVID-19 vaccine.

Second-generation participants ranged in age from 14 to 50 years (mean age 25.3 years, SD 12.5 years) (Table 1). The median ages of second-generation participants from each ethnic group were 22 years (Cambodian), 40.5 years (Laotian), and 15.5 years (Vietnamese). Among second-generation participants, 61% were born in the United States. Fifty-five per cent of second-generation participants speak English as their primary language and 87% report 'well' or 'very well' English proficiency. Ten per cent of second-generation participants rated their current health status as fair or worse (Table 2). Sixty-five per cent of second-generation participants had tested for COVID-19 at least once, and among those, 20% had tested positive for COVID-19. Ninety-seven per cent had received at least one COVID-19 vaccine.

Table 1. Demographics of participants surveyed.

		All ethnicities			1st generation			2nd generation		
		1st gen *N* = 47	2nd gen *N* = 31	Total *N* = 78	Cambodian *N* = 16	Laotian *N* = 16	Vietnamese *N* = 15	Cambodian *N* = 9	Laotian *N* = 14	Vietnamese *N* = 8
Average age (SD)		63.8 (11.2)	26.9 (12.5)	49.2 (21.6)	66.9 (12.7)	65.6 (7.7)	58.9 (11.5)	25.4 (7.0)	33.8 (14.5)	16.6 (2.3)
Gender	Male	10 (21%)	14 (45%)	24 (31%)	2 (13%)	5 (31%)	3 (20%)	3 (33%)	9 (64%)	2 (25%)
	Female	37 (79%)	17 (55%)	54 (69%)	14 (87%)	11 (69%)	12 (80%)	6 (67%)	5 (36%)	6 (75%)
Birth Country	USA	0 (0%)	19 (61%)	19 (24%)	0 (0%)	0 (0%)	0 (0%)	8 (89%)	5 (36%)	6 (75%)
	Other	47 (100%)	12 (39%)	59 (76%)	16 (100%)	16 (100%)	15 (100%)	1 (11%)	9 (64%)	2 (25%)
Average Years Since Immigration (SD)		23.8 (14.6)	NA	NA	26.6 (15.2)	29.7 (10.7)	12.4 (10.9)	NA	NA	NA
Average Household Size (SD)		3.5 (1.9)	3.5 (1.4)	3.5 (1.8)	4.3 (2.5)	3.3 (1.8)	3 (0.9)	3.3 (1.5)	3.7 (1.7)	3.3 (0.5)
Primary Language	English	0 (0%)	17 (55%)	17 (22%)	0 (0%)	0 (0%)	0 (0%)	6 (67%)	9 (64%)	2 (25%)
	Other	47 (100%)	14 (45%)	61 (78%)	16 (100%)	16 (100%)	15 (100%)	3 (33%)	5 (36%)	6 (75%)
English Proficiency	Not at all	10 (21%)	0 (0%)	10 (13%)	7 (44%)	1 (6%)	2 (13%)	0 (0%)	0 (0%)	0 (0%)
	Not well	24 (51%)	4 (13%)	28 (36%)	7 (44%)	8 (50%)	9 (60%)	0 (0%)	2 (14%)	2 (25%)
	Well	11 (23%)	5 (16%)	16 (21%)	2 (12%)	5 (31%)	4 (25%)	1 (11%)	4 (29%)	0 (0%)
	Very well	2 (4%)	22 (71%)	24 (31%)	0 (0%)	2 (13%)	0 (0%)	8 (89%)	8 (57%)	6 (75%)
Education Level	No formal education	12 (25%)	0 (0%)	12 (15%)	7 (44%)	4 (25%)	1 (7%)	0 (0%)	0 (0%)	0 (0%)
	Some primary or completed primary	12 (26%)	5 (16%)	17 (22%)	6 (38%)	5 (32%)	1 (7%)	0 (0%)	5 (35%)	0 (0%)
	Some secondary or completed secondary	15 (32%)	13 (42%)	28 (36%)	2 (13%)	2 (13%)	11 (73%)	2 (22%)	4 (28%)	7 (88%)
	Technical/vocational education	1 (2%)	1 (3%)	2 (3%)	0 (0%)	1 (6%)	0 (0%)	0 (0%)	1 (7%)	0 (0%)
	Some university, no degree	2 (4%)	5 (16%)	7 (9%)	1 (6%)	1 (6%)	0 (0%)	5 (55%)	0 (0%)	0 (0%)
	University level, with degree or higher	5 (11%)	7 (22%)	12 (15%)	0 (0%)	3 (19%)	2 (13%)	2 (22%)	4 (28%)	1 (12%)
Combined Household Income	Less than $14,999	27 (57%)	8 (26%)	35 (45%)	15 (93%)	8 (50%)	4 (27%)	3 (33%)	3 (21%)	2 (25%)
	$15,000–$29,999	7 (15%)	8 (26%)	15 (19%)	1 (7%)	1 (6%)	5 (33%)	2 (22%)	3 (21%)	3 (38%)
	$30,000–$39,999	6 (13%)	4 (13%)	10 (13%)	0 (0%)	1 (6%)	5 (33%)	1 (11%)	3 (21%)	0 (0%)
	$40,000–$49,999	4 (8.5%)	6 (19%)	10 (13%)	0 (0%)	3 (19%)	1 (7%)	2 (22%)	1 (7%)	3 (38%)
	$50,000–$74,999	1 (2%)	2 (6%)	3 (4%)	0 (0%)	1 (6%)	0 (0%)	1 (11%)	1 (7%)	0 (0%)
	More than $74,999	2 (4%)	3 (9%)	5 (6%)	0 (0%)	2 (13%)	0 (0%)	0 (0%)	3 (21%)	0 (0%)

Table 2. **Health status and utilization of health care services of participants surveyed.**

		All ethnicities			1st generation			2nd generation		
		1st gen *N* = 47 (%)	2nd gen *N* = 31 (%)	Total *N* = 78 (%)	Cambodian *N* = 16 (%)	Laotian *N* = 16 (%)	Vietnamese *N* = 15 (%)	Cambodian *N* = 9 (%)	Laotian *N* = 14 (%)	Vietnamese *N* = 8 (%)
Current Health Status	Poor	13 (28)	0 (0)	13 (17)	10 (63)	2 (12)	1 (7)	0 (0)	0 (0)	0 (0)
	Fair	16 (34)	3 (10)	19 (24)	3 (19)	6 (38)	7 (47)	1 (11)	2 (14)	0 (0)
	Good	15 (32)	18 (58)	33 (42)	1 (6)	8 (50)	6 (40)	7 (77)	6 (43)	5 (63)
	Excellent	3 (6)	10 (32)	13 (17)	2 (13)	0 (0)	1 (7)	1 (11)	6 (43)	3 (37)
Have you had any health insurance coverage during the past 12 months?	Yes	44 (94)	24 (77)	68 (87)	15 (94)	16 (100)	13 (87)	8 (89)	10 (71)	6 (75)
	No	3 (6)	7 (23)	10 (13)	1 (6)	0 (0)	2 (13)	1 (11)	4 (29)	2 (25)
Have you had one or more doctor office visits in the past 12 months?	Yes	43 (91)	21 (68)	64 (82)	15 (94)	14 (88)	14 (93)	7 (78)	9 (64)	5 (63)
	No	4 (9)	10 (32)	14 (18)	1 (6)	2 (12)	1 (7)	2 (22)	5 (36)	3 (37)
Have you had one or more remote/digital (telehealth) doctor office visits in the past 12 months?	Yes	31 (66)	15 (48)	46 (59)	11 (69)	12 (75)	8 (53)	5 (55)	6 (43)	4 (50)
	No	16 (34)	16 (52)	32 (41)	5 (31)	4 (25)	7 (47)	4 (45)	8 (57)	4 (50)
Have you had one or more emergency room (ER) visits in the past 12 months?	Yes	16 (34)	1 (3)	17 (22)	6 (38)	7 (44)	3 (20)	0 (0)	1 (7)	0 (0)
	No	31 (66)	30 (97)	61 (78)	10 (62)	9 (56)	12 (80)	9 (100)	13 (93)	8 (100)
Have you ever had, or thought you had, the Coronavirus, COVID-19?	Yes	19 40)	9 (29)	28 (36)	1 (6)	3 (19)	15 (100)	3 (33)	4 (29)	2 (25)
	No	28 (60)	22 (71)	50 (64)	15 (94)	13 (81)	0 (0)	6 (67)	10 (71)	6 (75)
Have you ever tested for the Coronavirus, COVID-19?	Yes	39 (83)	20 (65)	59 (76)	16 (100)	13 (81)	10 (67)	7 (78)	9 (64)	4 (50)
	No	8 (17)	11 (35)	19 (24)	0 (0)	3 (19)	5 (33)	2 (22)	5 (36)	4 (50)
Did you ever receive a positive test result for the Coronavirus, COVID-19?	Yes	8 (17)	4 (13)	12 (15)	1 (6)	4 (25)	3 (20)	1 (11)	2 (14)	1 (12)
	No	39 (83)	27 (87)	66 (85)	15 (94)	12 (75)	12 (80)	8 (89)	12 (86)	7 (88)
Did you obtain a COVID-19 vaccine when you were eligible to	Yes	46 (98)	30 (97)	76 (97)	15 (94)	16 (100)	15 (100)	9 (100)	13 (93)	8 (100)
	No, I was not able to access COVID-19 vaccinations	0 (0)	1 (3)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	1 (7)	0 (0)
	No, I decided not to receive COVID-19 vaccinations	1 (2)	0 (0)	1 (1)	1 (6)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Table 3. **Focus group cohorts.**

Ethnicity	Generation	Setting	# Participants
Cambodian	1st generation	In-Person	8
Cambodian	1st generation	In-Person	8
Cambodian	2nd generation	Virtual	3
Cambodian	2nd generation	Virtual	1
Cambodian	2nd generation	Virtual	2
Cambodian	2nd generation	Virtual	3
Laotian	1st generation	In-Person	8
Laotian	1st generation	In-Person	8
Laotian	2nd generation	Virtual	6
Laotian	2nd generation	Virtual	5
Laotian	2nd generation	Virtual	3
Vietnamese	1st generation	In-Person	7
Vietnamese	1st generation	In-Person	8
Vietnamese	2nd generation	Virtual	3
Vietnamese	2nd generation	Virtual	5

Qualitative focus group findings

Domain 1: Utilization of Medical Services During COVID-19 Pandemic

Theme 1: Language and technology barriers were magnified during the pandemic for first-generation participants, while telehealth options increased access options for second-generation participants

When asked about barriers to accessing health care, first-generation participants overwhelmingly described difficulties with language access and technology barriers (Table 4). While many first-generation participants expressed that remote or staff interpreters were generally available when accessing medical services, the quality and convenience of language access varied throughout the health care process and by clinic and native language spoken. Participants who

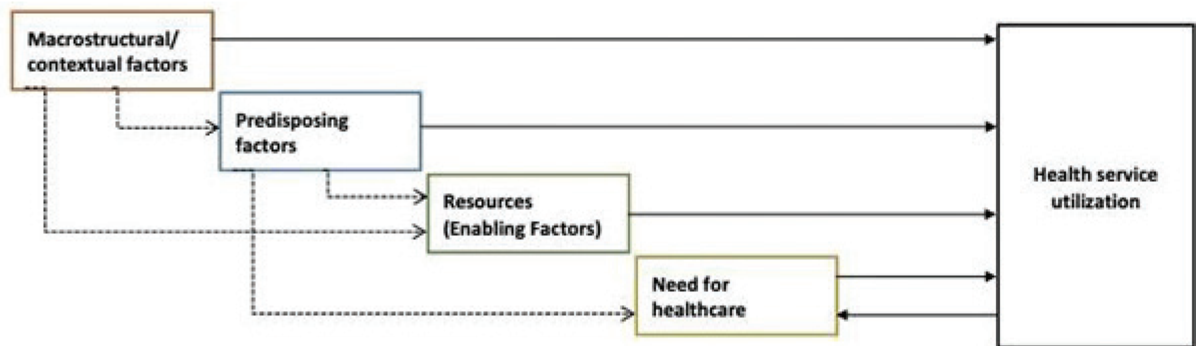

Figure 1. **Adapted conceptual framework of Asian American immigrant health utilization during COVID-19 pandemic.**[21,22]

Table 4. Themes and representative quotes.

Domain 1: Utilization of Medical Services During COVID-19 Pandemic
Theme 1: Language and technology barriers were magnified during the pandemic for first-generation participants, while telehealth options increased access options for second-generation participants 'I have to try my best and try to understand the information or read by myself. If it's something that I don't understand, I have to ask friends or other people around me to help translate. I can read a little bit of English, so I can try. However, for other people who don't read, speak, or write English at all, so there is no way at all for them to access those services. Government agencies do typically have Vietnamese interpretation options, but other services outside of government services doesn't have the same guarantee'. - 1st generation Vietnamese participant 'Sometimes the translator is not there, so it's different from in-person, especially for people who don't read or write, so they really prefer an in-person translator. Online [translators], some of them are good. But some of them because we are the Lao ethnicity, sometimes they get someone from another ethnic group from Laos that can speak other dialects. It doesn't make sense and they have to stop right there. People from Laos, there's many different ethnic groups. The problem is that they ask for someone who speaks Lao, but they don't know that there are different dialects. They just get someone from Laos and then they speak different dialects, so then they have to cancel [the appointment] because ethnic language differences'. - 1st generation Lao participant 'I also saw like issues in terms of like language barriers and stuff when I was trying to book appointments for like my dad who like needed like mental health services. There were no providers who spoke Cambodian so finding him resources was difficult'. - 2nd generation Cambodian participant
Theme 2: Fear of anti-Asian violence deterred participants from public outings and activities 'One thing I feel is that I want to exercise, but I'm worried that someone will push me and cause me to hit my head on the ground, so I'm afraid to do so. During this time, my eyes have also been worsening … and It's been difficult to go back and forth to the doctors. I want to go exercise here and there, but my kids tell me 'Mom, don't go! Be careful because they might push you and break your skull open!' I've been very worried'. - 1st generation Cambodian participant 'I never dare to go out by myself, I always have to ask someone to go out with me. When I go out, I try to hide everything by wearing sunglasses, masks, and a huge hat and cover everything so that they don't recognize that I am Asian when I take the bus or am walking on the street. If my phone rings, I don't dare to pick it up because I'm afraid of people hearing when I talk and know that I am speaking an Asian language and am Asian'. - 1st generation Vietnamese participant 'I don't think I was like scared for myself, I was more scared of like the Asian Americans and like my community and like my family members, and so, if, like my mom would like want to walk in the neighborhood alone like I would get scared. yeah I wasn't really like worried about myself, I was just more worried about like the people my community and my family members'. - 2nd generation Cambodian participant
Domain 2: The Role of Community and Community Centers
Theme 1: Intergenerational support facilitated health care access prior to and during the COVID-19 pandemic 'It has been very difficult for my situation. One, the language barrier and two, I don't know how to use the iPhone to access appointments for the doctor or social services. When I ask my children, they seem to be busy or not available, so I have to go around and look for social services, but many of the social services don't have Lao-speaking staff or interpreters, and many places are closed. We rely on Lao Seri Association for support. We ask Lao Seri to help us with translation, and if they are not available, then we ask our children for help. It's up to seniors to ask for the services'. – 1st generation Lao participant 'I noticed for my parents like I help them make some of their appointments. [At] the beginning of the pandemic they were not able to go to the doctors often they should have and, like my dad is diabetic so he has like a specialized doctor and yeah they were were scared of if they went to the doctor's office that they would like to have more interaction, or like those are like places where they like our higher chances of catching COVID so they definitely didn't want to go, then, and then like they don't know how to use Telehealth so that wasn't really an option for them. Now, I think, as soon as doctors have like limited capacity there. They're still kind of not able to see their doctors as often but it's more frequent than before'. - 2nd generation Cambodian participant
Theme 2: *Community centers provided critical social services to first-generation participants* 'I want to thank you for the opportunity to have this space to reflect on the pandemic and health and the Lao community. I've actually been less engaged in a lot of community in this past 17 months. We usually do a cultural festival in collaboration with a Southeast Asian group here in the city, but we had to do virtual this past year and we canceled this year because of the new delta variant'. - 2nd generation Lao participant 'We use the temple as a mental health and stress-reducing place. The monks can speak Lao, Thai, and Cambodian, so we believe it and can do medications. It helps us maintain our physical health. When physical health gets better, the mental health gets better too. The spirituality is important for healing too. In the past, they could invite the monks to do a blessing ceremony at the temple or home, but during COVID-19, they could not do it. We tried going to the temple and the temple limited people and closed like everywhere else People got stuck for a long time. Only recently have they opened again for limited number of people and people need to be vaccinated. Information that we have for the community, the temple is the best place to share information with people. The monks there can speak our language and they have traditional techniques to talk to people, and people tend to sit down and listen, meditation, so that's also supportive of their well-being'. - 1st generation Lao participant 'It depends on the need, what type of services is needed and what information I need to access different services. Usually, I come to the community center to get information and from there, if I need to get tested, they tell me where I should go, or if I need to go to the doctor, they help me make an appointment, or if I need to apply for something. It depends on the need, but usually help comes from the community center'. - 1st generation Vietnamese participant
Domain 3: COVID-19 Prevention
Theme 1: COVID-19 safety precautions, such as shelter-in-place and personal protective equipment (PPE) policies, contributed to interpersonal conflict and financial stress among participants 'At first, I had the same feeling as what everyone else just shared. I was very scared when going out. I wasn't sure if people would have COVID and spread it to me, so I have been very scared. Later, some of my friends were COVID-positive, and they were able to recover after staying home. That made me feel a bit better. It's still very dangerous, but I felt more reassured [after their recoveries.] When I was able to get the vaccine, I felt a lot better and felt a lot more protected. Now, when I learned that there's the delta variant, I realized that it's still not that safe, so we need to take precautions like wearing masks and other things'.

Continued

Table 4. (Continued)

Domain 3: COVID-19 Prevention
- 1st generation Vietnamese participant 'I am depressed and under stress because my family stays together during shelter-in-place and we're overcrowded, so that makes us more depressed. Along with financial problems and worrying about everything to be safe because of all of the changes. We have to buy more supplies. I have to negotiate and balance family relationships. We have to come together for discussions and we're more depressed and under stressed. Even getting things back to normal is difficult because of the COVID pandemic. We're afraid of the virus'. - 1st generation Lao participant 'I think it was just a blessing in a weird way because I was working multiple part time jobs before the pandemic, so I didn't have a lot of time with family. So in terms of the pandemic itself, it was a concern in the beginning, worrying about getting sick. But luckily, we stayed COVID free as a family and we were able to get out everyday for a few hours after they were distant learning and explore San Francisco and do new activities to keep busy. It was a positive in that respect but it was scary because nobody wanted to get sick, so we were always wearing masks and trying to avoid crowds'. - 2nd generation Lao participant
Theme 2: The lack of linguistically accessible COVID-19 information and services posed challenges to COVID-19 testing and vaccination 'It's been convenient for me because my daughter takes me. My daughter makes the appointment and drives me through the drive-thru. A lot of seniors have someone escort them to get tested or vaccinated because they are afraid because they don't speak the language. [blinded organization names] assist people to vaccine sites and COVID tests'. - 1st generation Lao participant 'I just wanted to add that I do like that for getting tested and everything was easy like I was able to like ship it to myself, instead of going out somewhere. But I felt like it was easy for myself, but for my parents I don't think they would have been able to figure out how to get a vaccine and like schedule like sign up. If I didn't do it for them, I don't know if they would have been able to so I feel like that was like a good thing for myself that everything was online, but for them, I don't know if they would have been able to do things by themselves'. - 2nd generation Cambodian participant

spoke Khmer or Lao observed long wait times for an available interpreter at clinics compared to Vietnamese-speaking participants. First-generation participants highlighted the differences between speaking and being literate in their native language and perceived barriers in completing health care forms or understanding written communications about their health care. Most first-generation participants relied on their families, friends, or community centers for language assistance if interpretation or translation services were unavailable.

Many first-generation participants shared frustrations with the technological skills needed to obtain health care and highlighted the need for tech literacy to utilize patient portals or check-in kiosks in clinics. First-generation participants faced further technology barriers to accessing health services during the COVID-19 pandemic when most ambulatory and elective medical care abruptly shifted to remote, telehealth services. Some participants relied on family members to help them participate in telehealth visits, while other participants deferred their health care until clinic appointments were available again. Even if participants were able to access telehealth visits, some participants preferred clinic visits to be able to be physically examined and decreased their trust in health care providers on telehealth visits.

Second-generation participants shared challenges of navigating health insurance and transportation barriers. Many participants' lack of knowledge about health insurance processes and the logistical burden of navigating health insurance plans created barriers to utilizing health services. Among participants who were uninsured, some described hesitancy to seek medical care due to fear of exorbitant medical bills. In addition, participants highlighted the unreliability of public transportation and financial burden of transportation deterring them from seeking medical care. Some suggested their preference for telehealth visits if available to overcome transportation barriers.

Theme 2: Fear of anti-Asian violence deterred participants from public outings and activities.

Across ethnicities and generations, participants highlighted the impact that fear and anxiety about anti-Asian violence has had on their daily lives and health-seeking behaviors (Table 4). Participants mentioned several incidents of physical assault towards community members they personally knew. Both first-generation and second-generation participants expressed that fear of anti-Asian violence occurring to themselves or their families has created a sense of 'hyper-awareness' when going out in public. First-generation participants mentioned that they would alter plans to go out earlier during the day or when a family member could accompany them or would employ strategies to avoid being identified as Asian. In contrast, second-generation participants were unlikely to change medical appointments or plans deemed necessary but maintained vigilance when out in public. Second-generation participants expressed greater concern about older community members being victims of anti-Asian violence than their own personal safety.

Domain 2: The Role of Community and Community Centers

Theme 1: Intergenerational support facilitated health care access prior to and during the COVID-19 pandemic

Intergenerational community was an underlying theme that spanned multiple topics and was discussed by both first- and second-generation participants (Table 4). First-generation participants heavily relied on younger family members for language interpretation and help with

accessing online resources and navigating telehealth. Many first-generation individuals needed family members to accompany them to necessary appointments and other medical services. However, due to the COVID-19 pandemic limiting the number of visitors allowed, accessing service became more difficult for first-generation participants. Second-generation participants discussed experiences of acting as interpreters and caretakers and facilitating crucial communications between their elder family members and necessary health resources. Despite the desire to support their families, second-generation individuals faced significant strain and burden from assuming these roles. However, COVID-19 limited second-generation participants from accompanying their family members to provide interpretation and emotional support was frustrating to them as well.

Throughout the duration of the COVID-19 pandemic, both generations experienced higher levels of stress from feelings of concern for the other. First-generation participants were worried about the health and safety of their children and grandchildren, while second-generation participants worried about the health and safety of their elder family members with the rise of anti-Asian hate targeting vulnerable, elderly Asian-Americans.

Theme 2: Community centers provided critical social services to first-generation participants

When asked what factors helped to increase accessibility to medical and social services, all participants highlighted the assistance provided by community centers (Table 4). Local community centers were described as physical and social spaces from which participants were able to access support and seek community. First-generation participants shared that community centers offer helpful services including medical interpretation, assistance with filling out official documents, information about other community resources, and basic needs supplies. Additionally, community centers helped first-generation participants who faced technology barriers to access other social services through online portals and websites. Second-generation participants also noted that Southeast Asian Development Center provided critical access to food during the COVID-19 pandemic.

Participants also shared the interruption of services provided by community centers due to the pandemic affected the support they were able to receive in seeking out medical and social services, as well as impacted their sense of social connectedness. First-generation participants expressed frustration and stress as COVID-19 restrictions limited the ability to engage in their communities culturally and religiously, including access to spiritual services and their ability to visit their home countries.

Domain 3: COVID-19 Prevention

Theme 1: COVID-19 safety precautions, such as shelter-in-place and personal protective equipment (PPE) policies, contributed to interpersonal conflict and financial stress among participants

Most participants agreed on the importance of wearing personal protective equipment (PPE), social distancing, and sheltering-in-place to minimize the risk of COVID-19 infection (Table 4). In addition, all participants shared concerns about visiting clinics or hospitals due to worry of increased exposure to COVID-19 in clinical settings. Although many participants shared their discomfort of wearing face coverings for extended durations and feelings of isolation and loneliness while sheltering-in-place, participants mentioned the importance of such precautions to keep themselves, their families, and their communities as safe as possible. Many first-generation participants highlighted the increased financial burden of purchasing PPE and cleaning supplies on limited, fixed incomes.

Theme 2: The lack of linguistically accessible COVID-19 information and services posed challenges to COVID-19 testing and vaccination

Most participants expressed satisfaction with the availability of testing sites, as well as vaccination sites when they were eligible to be vaccinated (Table 4). Many first-generation participants emphasized the convenience of community testing sites located in their neighborhoods. Some expressed frustrations of the lack of language access at COVID-19 testing and vaccination sites. Second-generation participants highlighted their role in helping elder family members locate testing and vaccination sites and making appointments through websites and mobile apps. The lack of information about COVID-19 testing and vaccines in participants' native languages contributed to skepticism and hesitancy to getting tested or vaccinated. Despite the challenges of navigating COVID-19 testing and vaccination, almost all participants who were vaccinated expressed feeling more safe and less anxious about contracting severe COVID-19 disease. Participants' perception of why others in their communities were not getting vaccinated include mistrust of the health care system, cultural or political beliefs, and fear of vaccine side effects.

DISCUSSION

In our unique study of the San Francisco Bay Area Southeast Asian American community's experiences

during the first phase of the COVID-19 pandemic (March 2020 to July 2021), we found deleterious effects of the pandemic on health care utilization. Our findings highlighted participants of the same generational status faced similar barriers to health care access and utilization compared to differences based on ethnicity (e.g. first-generation participants across ethnicities faced similar barriers and second-generation participants across ethnicities faced similar barriers). Furthermore, the fear of anti-Asian violence overshadowed and shaped the experiences of many participants. However, intergenerational support ameliorated the experiences of first-generation participants and community centers were vital to supporting the community during a tumultuous time. The experiences of Southeast Asian Americans need to be uplifted and recognized to improve the health outcomes of a historically overshadowed community. Generational differences in cultural, linguistic, and technological factors need to be considered when serving Southeast Asian Americans. The findings from the study are crucial to advancing health equity among Southeast Asian Americans and can be mapped to the Center for Disease Control and Prevention's framework for '10 Essential Public Health Services' (Figure 2).[29]

Throughout the pandemic, the fear of anti-Asian violence permeated every aspect of life for many community members. The majority of first-generation Southeast Asian Americans resettled in the US as immigrants and refugees from genocide, war, persecution, and poor living conditions in Southeast Asian homelands and refugee camps.[24] The heightened atmosphere of anti-Asian violence and xenophobia may resurface experiences of trauma and violence that the first-generation participants previously fled, intensifying fear of anti-Asian violence against themselves and their families. Many participants highlighted how their general fear of COVID-19 illness was further compounded by fear of anti-Asian violence leading them to limit public outings and to practice hypervigilance in public settings. This fear and anxiety contributed another barrier to accessing medical resources and prevented many from carrying out necessary day-to-day activities including exercise, running errands, and using public transportation. Given the history of war and trauma experienced by Southeast Asian Americans, further harm and distress to community members must be prevented by advocating for resources to promote community safety and healing, such as expanded access to mental health services and trauma-informed care.[30] The expansion of culturally relevant mental health resources will allow community members to process trauma and minimize the perpetuation of intergenerational trauma onto younger generations.[31] As carriers of past trauma, it is likely that the Southeast Asian American community may continue to be affected by the fear of anti-Asian violence, even after the COVID-19 pandemic era. As the United States moves forward from the COVID-19 pandemic, the public health infrastructure

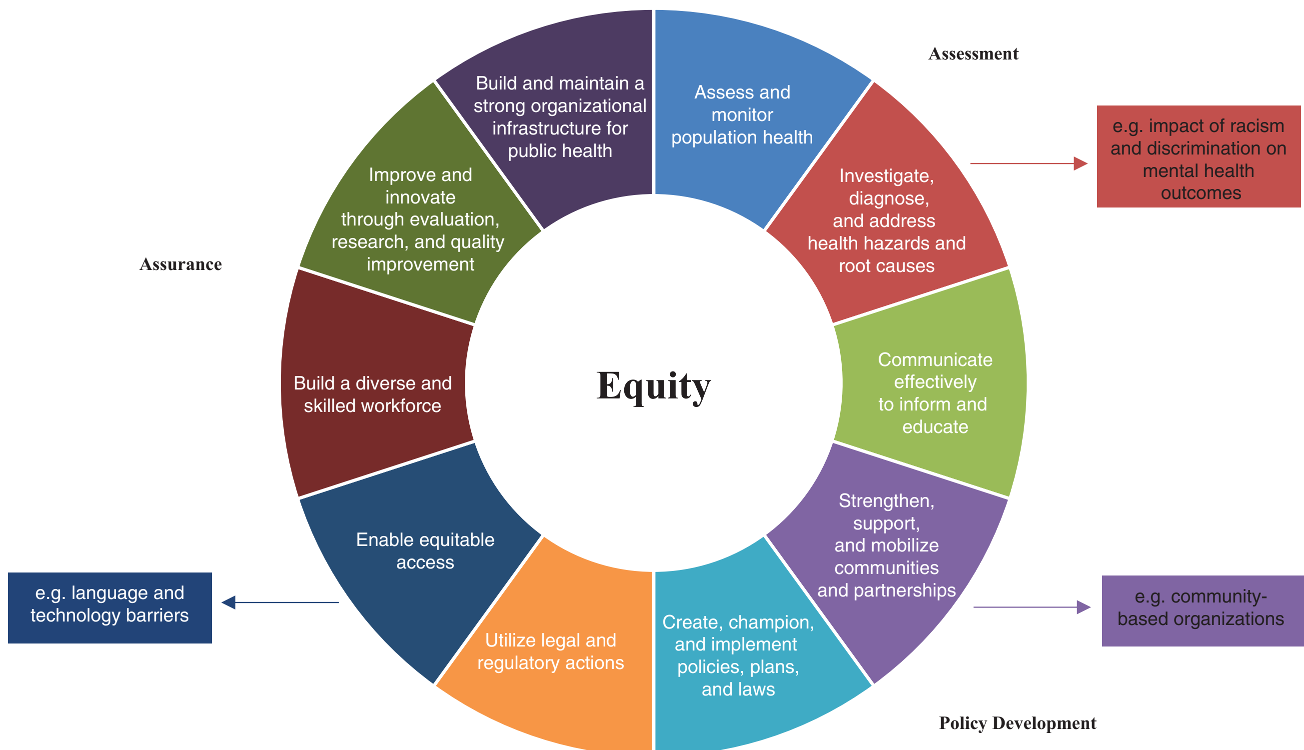

Figure 2. Adapted centers for disease control and prevention '10 essential public health services' framework.[29]

needs further assessment and to 'investigate, diagnose, and address health hazards and root causes' such as impacts of racism and discrimination on mental health outcomes.[29]

The majority of Cambodian, Laotian, and Vietnamese Americans fled war-torn homelands in the late twentieth century and resettled across the United States. Southeast Asian Americans have some of the lowest median household incomes and education attainment rates compared to other Asian American subgroups.[32] At the beginning of the pandemic, there were large reductions in non-emergent health services as well as racial or ethnic and income disparities between users of in-person care and telemedicine when many health systems reduced services. The reduction and shift to telehealth during the pandemic limited health care access to those who could navigate telehealth visits, which typically required stable internet connection, English proficiency, and technology literacy, and often excluded many first-generation participants. While COVID-19 services such as testing and vaccination were eventually available in their communities, similar barriers posed to utilizing non-COVID-19 health services such as language and technology were still hindering Southeast Asian Americans from accessing the services without support. Telehealth options helped many participants access health services during the pandemic, but exacerbated barriers for others without the language or technological skills needed to utilize telehealth services.[33] While technology can be imperative to addressing health disparities, technology must be intentionally developed to serve the needs of vulnerable communities. Without the support of second-generation family members and community centers, many first-generation participants would not have been able to utilize telehealth services, leading to health care access delays and worse health status.

Culturally relevant and linguistically accessible health services need to be prioritized throughout the entire process of health care utilization, especially during emergent times, to ensure that the most vulnerable populations can access quality health care. In terms of language access, all first-generation participants identified a language other than English as their primary language and had limited English proficiency. While studies examining disparities in health access among Asian Americans during the pandemic are limited, a federally qualified health center in Oakland, California, found that 49% of the 1,297 Asian American participants surveyed indicated that they could not find a place to get tested during the summer of 2020.[25] One year later, partnerships with community-based organizations in the San Francisco Bay Area have made COVID-19 testing services more readily accessible for underserved communities, including linguistic access.[34] Participants reported differences in the availability and quality of language interpretation services among Khmer, Lao, and Vietnamese language needs. Among the first-generation participants, Khmer and Lao-speaking participants were less likely to be able to read their native language script compared to Vietnamese participants, limiting the effectiveness of translated written language. The varied language access experiences of our first-generation participants highlight the need for expanded language access in non-medical settings and throughout the process of health care utilization (e.g. medical documents, patient portals), as well as more reliable, quality access to language interpretation in medical settings consistent with Title VI of the *Civil Rights Act*.[35] Without ensuring culturally relevant and linguistically accessible services, limited English proficient patients will be hindered from receiving quality care. In order to expand assurance of health equity, language and technology barriers need to be considered to 'expand equitable access' to health services.[29]

Asian Americans are not a monolith and cannot be considered an aggregate. Therefore, community programs and interventions need to be tailored to the needs of each community. This suggests the value of community and community-oriented health among Southeast Asian Americans and the potential of pursuing community-led health interventions in advancing health for Southeast Asian Americans. Despite the uncertainty of the pandemic, fear of anti-Asian violence, and exacerbated barriers to health care access, many participants strived to maintain their health and continued to utilize health services as much as possible. There was a strong, reciprocal relationship of care and concern between generations regarding each generation's health and safety, reflective of the interdependent, community-oriented values shared by many Southeast Asian Americans. Community and cultural centers have been and continue to be vital for providing basic resources and information to community members, especially for many first-generation community members. For many of these community members and their families, community centers provide key services, such as language interpretation, resource navigation, and the sharing of essential information, and intricately understand the needs of the communities they serve. The continued support and expansion of community-based organizations through increased funding and institutional support are pivotal to improving the health of underserved Southeast Asian American communities. In the process of advancing health equity, policy development must 'strengthen, support, and mobilize communities and partnerships' such as community-based organizations and the key roles they play in their communities.[29]

Our study revealed the lived experiences of Cambodian, Laotian, and Vietnamese participants and showcased on-going challenges that need to the addressed to improve health care access and ultimately health outcomes for these communities. While the COVID-19 pandemic certainly exacerbated longstanding

health care access barriers, such as language access, the pivotal event also highlighted newer challenges, such as technology literacy, in our everchanging healthcare system.

Limitations

Thematic saturation was achieved but not without study limitations. Firstly, the study was conducted in the San Francisco Bay Area and may not be generalizable to other Southeast Asian American communities.[36] Secondly, the participants were primarily recruited through Southeast Asian American-serving community-based organizations in San Francisco, so participants in the study may be more likely to utilize community-based services and be more socially connected to their communities. Thirdly, the inherent on-going nature of the COVID-19 pandemic and spike in anti-Asian violence may have deterred risk-averse, vulnerable, or immunocompromised individuals from participating in the study. In addition, our community partners preferentially recruited participants who were vaccinated for COVID-19 and asymptomatic to minimize the risk of COVID-19 infections during study participation. This may have shifted the selection of participants to primarily include participants who were more likely to utilize health services and adhere to public health guidance.

CONCLUSION

This is the first study, to our knowledge, to investigate the impact of the COVID-19 pandemic on Cambodian, Laotian, and Vietnamese Americans across first-generation and second-generation participants. The study findings demonstrate the exacerbation of barriers to health care utilization, such as language and technology, under the circumstances of the pandemic and concurrent atmosphere of anti-Asian violence. Health care access barriers differ between first-generation and second-generation Southeast Asian Americans and tailoring social and health care services to generational needs could enhance health care utilization. Furthermore, structural and cultural changes are needed to eliminate racial discrimination and violence towards Asian Americans and promote physical and psychosocial safety. There needs to be continued expansion of culturally relevant, linguistically accessible, and trauma-informed health care services and increased funding and increased support of community-based organizations who are at the forefronts of Southeast Asian American communities.

ARTICLE INFORMATION

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Conflict of interest and funding

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Ethics approval and consent to participate

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Stanford University Institutional Review Board (May 12, 2021, #60712). Informed consent was obtained from all individual participants included in the study and written informed consent was obtained from parents or guardians of participants who were under 18 years of age.

Availability of data and material

The data that support the findings of this study are available from the corresponding author, DC, upon reasonable request.

REFERENCES

1. Bambra C, Riordan R, Ford J, Matthews F. The COVID-19 pandemic and health inequalities. *J Epidemiol Community Health*. 2020;74(11):964–968. https://doi.org/10.1136/jech-2020-214401
2. Dinh Q, Mariategue K, Byon A. COVID-19 – Revealing unaddressed systemic barriers in the 45th anniversary of the Southeast Asian American Experience. *J Southeast Asian Am Educ Adv*. 2020;15(2):11. https://doi.org/10.7771/2153-8999.1209
3. Centers for Disease Control and Prevention (CDC). *COVID Data Tracker*. 2020. Available from: https://covid.cdc.gov/covid-data-tracker [cited 15 February 2022].
4. *Tracking COVID-19 in California – coronavirus COVID-19 response*. Available from: https://covid19.ca.gov/state-dashboard/ [cited 15 February 2022].
5. Tai DBG, Sia IG, Doubeni CA, Wieland ML. Disproportionate impact of COVID-19 on racial and ethnic minority groups in the United States: a 2021 Update. *J Racial Ethn Health Disparities*. 2021;9:2334–2339. https://doi.org/10.1007/s40615-021-01170-w
6. Kalyanaraman Marcello R, Dolle J, Tariq A, Kaur S, Wong L, Curcio J, Thachil R, Yi SS, Islam N. Disaggregating Asian race reveals COVID-19 disparities among Asian American patients at New York City's public hospital system. *Public Health Rep*. 2021;137(2):317–325. https://doi.org/10.1101/2020.11.23.20233155
7. Yan BW, Ng F, Chu J, Tsoh J, Nguyen TT. *Asian Americans facing high COVID-19 case fatality | health affairs forefront*. 2020. Available from: https://www.healthaffairs.org/do/10.1377/forefront.20200708.894552/full/ [cited 3 January 2022].
8. Đoàn LN, Takata Y, Sakuma KLK, Irvin VL. Trends in clinical research including Asian American, Native Hawaiian, and Pacific Islander participants funded by the US National Institutes of Health, 1992 to 2018. *JAMA Network Open*. 2019;2(7):e197432. https://doi.org/10.1001/jamanetworkopen.2019.7432
9. Holland AT, Palaniappan LP. Problems with the collection and interpretation of Asian-American health data: omission, aggregation, and

extrapolation. *Ann Epidemiol*. 2012;22(6):397–405. https://doi.org/10.1016/j.annepidem.2012.04.001
10. Gordon NP, Lin TY, Rau J, Lo JC. Aggregation of Asian-American subgroups masks meaningful differences in health and health risks among Asian ethnicities: an electronic health record based cohort study. *BMC Public Health*. 2019;19(1):1551. https://doi.org/10.1186/s12889-019-7683-3
11. Yi SS, Đoàn LN, Choi JK, Wong JA, Russo R, Chin M, Islam NS, Taher MD, Wyatt L, Chong SK, et al. With no data, there's no equity: addressing the lack of data on COVID-19 for asian american communities. *eClinicalMedicine*. 2021;41:101165. https://doi.org/10.1016/j.eclinm.2021.101165
12. Le TK, Cha L, Han HR, Tseng W. Anti-Asian Xenophobia and Asian American COVID-19 disparities. *Am J Public Health*. 2020;110(9):1371–1373. https://doi.org/10.2105/AJPH.2020.305846
13. *National Report (Through December 31, 2021)*. Stop AAPI Hate; 2022. Available from: https://stopaapihate.org/national-report-through-december-31-2021/ [cited 31 March 2022].
14. Hahm HC, Ha Y, Scott JC, Wongchai V, Chen JA, Liu CH. Perceived COVID-19-related anti-Asian discrimination predicts post traumatic stress disorder symptoms among Asian and Asian American young adults. *Psychiatry Res*. 2021;303:114084. https://doi.org/10.1016/j.psychres.2021.114084
15. Chen JA, Zhang E, Liu CH. Potential impact of COVID-19–related racial discrimination on the health of Asian Americans. *Am J Public Health*. 2020;110(11):1624–1627. https://doi.org/10.2105/AJPH.2020.305858
16. Lee S, Waters SF. Asians and Asian Americans' experiences of racial discrimination during the COVID-19 pandemic: impacts on health outcomes and the buffering role of social support. *Stigma Health*. 2021;6(1):70–78. https://doi.org/10.1037/sah0000275
17. Lozano P, Rueger SY, Lam H, Louie N, Southworth A, Maene C, et al. Prevalence of depression symptoms before and during the COVID-19 pandemic among two Asian American Ethnic Groups. *J Immigrant Minority Health*. 2022;24(4):909–917. https://doi.org/10.1007/s10903-021-01287-4
18. Kim W, Keefe RH. Barriers to healthcare among Asian Americans. *Soc Work Public Health*. 2010;25(3–4):286–295. https://doi.org/10.1080/19371910903240704
19. Wagner J, Burke G, Kuoch T, Scully M, Armeli S, Rajan TV. Trauma, healthcare access, and health outcomes among Southeast Asian Refugees in Connecticut. *J Immigrant Minority Health*. 2013;15(6):1065–1072. https://doi.org/10.1007/s10903-012-9715-2
20. Uba L. Cultural barriers to health care for southeast Asian refugees. *Public Health Rep*. 1992;107(5):544–548.
21. *APIs in the Bay area are diverse and live in communities throughout the region*. Available from: https://datawrapper.dwcdn.net/HZjDC/4/ [cited 14 June 2022].
22. Allday E. Bay Area orders 'shelter in place', only essential businesses open in 6 counties. 2020. *San Francisco Chronicle*. Available from: https://www.sfchronicle.com/local-politics/article/Bay-Area-must-shelter-in-place-Only-15135014.php [cited 01 April 2022].
23. Hwang K, Sumida N. *Here's how S.F.'s coronavirus curve compares to some of the biggest U.S. cities right now*. 2021. Available from: https://www.sfchronicle.com/health/article/Here-s-how-S-F-s-coronavirus-curve-compares-16381379.php [cited 01 April 2022].
24. Rumbaut RG. Ages, life stages, and generational cohorts: decomposing the immigrant first and second generations in the United States. *Int Migrat Rev*. 2004;38(3):1160–1205. https://doi.org/10.1111/j.1747-7379.2004.tb00232.x
25. Quach T, Đoàn LN, Liou J, Ponce NA. A rapid assessment of the impact of COVID-19 on Asian Americans: cross-sectional survey study. *JMIR Public Health Surveill*. 2021;7(6):e23976. https://doi.org/10.2196/23976
26. *California Health Interview Survey | UCLA Center for Health Policy Research*. Available from: https://healthpolicy.ucla.edu/chis/Pages/default.aspx [cited 01 April 2022].
27. Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? J Health Soc Behav. 1995;36(1):1–10. https://doi.org/10.2307/2137284
28. Yang PQ, Hwang SH. Explaining immigrant health service utilization: a theoretical framework. *SAGE Open*. 2016;6(2):2158244016648137. https://doi.org/10.1177/2158244016648137
29. *CDC – 10 essential public health services – Public Health Infrastructure Center*. 2024. Available from: https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html [cited 20 April 2024].
30. Cheng SS, Saad JKY, Chu JP. *Asian American mental health: a call to action*. Available from: https://psycnet.apa.org/fulltext/2012-27130-003.html [cited 14 June 2022].
31. Sangalang CC, Vang C. Intergenerational trauma in refugee families: a systematic review. *J Immigr Minor Health*. 2017;19(3):745–754. https://doi.org/10.1007/s10903-016-0499-7
32. Budiman A, Ruiz NG. *Key facts about Asian origin groups in the U.S.* Pew Research Center. Available from: https://www.pewresearch.org/short-reads/2021/04/29/key-facts-about-asian-origin-groups-in-the-u-s/ [cited 24 March 2024].
33. Rodriguez JA, Saadi A, Schwamm LH, Bates DW, Samal L. Disparities in telehealth use among California patients with limited English proficiency. Health Aff. 2021;40(3):487–495. https://doi.org/10.1377/hlthaff.2020.00823
34. Fields J, Raul GJ, Marquez C, Rhoads K, Kushel M, Fernández A, Chamie G, Rios-Fetchko F, Imbert E, Nagendra C, et al. *Community-academic partnerships to address Covid-19 inequities: lessons from the San Francisco Bay Area*. NEJM Catalyst Innovations in Care Delivery; 2021. Available from: https://catalyst.nejm.org/doi/full/10.1056/CAT.21.0135 [cited 17 May 2022].
35. Juckett G, Unger K. Appropriate use of medical interpreters. *Am Fam Physician*. 2014;90(7):476–480.
36. How weak safety net policies exacerbate regional and racial inequality. Center for American Progress. Available from: https://www.americanprogress.org/article/weak-safety-net-policies-exacerbate-regional-racial-inequality/ [cited 29 April 2022].