

# Experiences and impacts of COVID-19 among Pacific Islanders in Los Angeles County

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## Abstract

**Objective:** To explore and document the experiences and impacts of COVID-19 among Pacific Islander (PI) adults living in Los Angeles County.

**Methods:** Study participants completed a brief online demographic questionnaire followed by a 45- to 60-min semi-structured one-on-one interview conducted *via* Zoom. Participants were asked about two main areas: (1) reasons for high rates of COVID-19 cases among the PI community and its impacts on their community and (2) the impacts of COVID-19 on them as individuals.

**Results:** A total of 14 PI adults, a majority of whom were females (76%) with an average age of 39.2 years took part in the study. Participants cited underlying medical conditions, overrepresentation in the essential workforce, multigeneration households, and the collectivistic culture of PIs as possible reasons for high rates of COVID-19 cases in their communities. Impacts of the pandemic included loss of jobs, loss of family and friends, and poor mental health which have been exacerbated by the pandemic.

**Conclusion:** This study documents the perspectives of PIs on why rates of COVID-19 are high in their community, their experiences with COVID-19 testing, and the impacts that the pandemic has had on themselves and their community. Findings from this study will assist public health professionals and health care providers in refining services and programs for the PI community.

**Keywords:** COVID-19, Pacific Islanders

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## Introduction

According to John Hopkins University's School of Medicine, as of August 2021, there are over 207 million confirmed cases of COVID-19 and 4.3 million deaths worldwide.<sup>1</sup> Within the United States, there have been about 36 million cases of COVID-19 and about 622,300 deaths.<sup>2</sup> With an estimated total population of over 330 million people, this means that approximately 11% of the total US population have been infected with the virus. In Los Angeles County alone, there have been over 1.3 million reported cases of COVID-19 and over 24,905 deaths.<sup>3</sup> The most vulnerable groups are older adults and those with underlying medical conditions including those with cancer,

chronic obstructive pulmonary disease (COPD), Down syndrome, heart conditions, and type 2 diabetes and individuals who are immunocompromised, severely obese, pregnant, and who smoke.<sup>4</sup>

Ethnic minorities are disproportionately affected by COVID-19<sup>5–8</sup> and are more likely to live in areas with high prevalence of COVID-19 cases.<sup>9,10</sup> Ethnic minorities make up more than 50% of all US COVID-19 cases despite being less than half of the total US population.<sup>7</sup> Factors such as lack of access to health care, pre-existing health conditions, high representation in essential workforce, and crowded living conditions, as a result of living

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in multigenerational households or unemployment-related eviction which necessitates shared housing, all contribute to high rates of COVID-19 and COVID-19-related complications among ethnic minorities.<sup>7,8,11</sup>

### *Pacific Islanders*

Pacific Islanders (PIs) make up less than 1% of the total US population.<sup>12</sup> They consist of individuals with ancestry from small and large islands scattered throughout the Pacific Ocean like the US state of Hawaii, US territories like Guam and American Samoa, and island nations like Tonga and Fiji. Like other minority communities, PIs have been disproportionately affected by COVID-19 as infection rates and death rates among PIs are high in comparison to that of other racial/ethnic groups.<sup>13–16</sup> In fact, PIs have the highest per capita COVID-19-related death rates in 18 of the 20 states reporting PI-specific data.<sup>16</sup> According to US Census Bureau estimates, California is home to approximately 197,500 PIs and about 40,000 reside in Los Angeles County.<sup>12</sup> The University of California Los Angeles (UCLA) COVID-19 Data Policy Lab Dashboard, which provides the most current, updated information about COVID-19 cases for PIs, reports a total of 17,130 COVID-19 cases among PIs living in California as of August 2021 or 12,976.48 per 100,000 cases, the highest proportion of COVID-19 cases compared with any other racial and ethnic groups.<sup>17</sup> In Los Angeles County alone, there are 4690 cases of COVID-19 among PIs as of August 2021, approximately 24.5% of the PI population in the county, a stark contrast in comparison to 5.6% of Whites, 7.4% of Blacks/African Americans, 14.0% of Hispanics/Latino, 4.4% of Asians, and 9.8% of American Indians or Alaskan Natives that have cases of COVID-19.<sup>18</sup>

High rates of COVID-19 infections and deaths among PIs are concerning given their existing health conditions. PIs have one of the highest rates of pre-existing chronic medical conditions and related mortality rates in the United States.<sup>19,20</sup> According to the 2012–2014 Behavioral Risk Factor Surveillance System (BRFSS), a majority (53.3%) of PIs are overweight [body mass index (BMI) = 25.0–29.9] and 37.3% are considered obese (BMI  $\geq$  30.0),<sup>21</sup> putting them at increased risk for various chronic diseases like diabetes and cardiovascular disease. In

fact, age-adjusted diabetes rates for adults over 18 years among PIs was 15.2% compared with 8.5% of the total US population.<sup>22</sup> Despite disproportionately high rates of chronic medical conditions, analysis of the NHPI-National Health Interview Survey data found that PIs are not more likely than any other ethnic group to access medical care (i.e. emergency rooms and outpatient medical facilities).<sup>23</sup> This disconnect between high rates of chronic health conditions and utilization of medical care underscores the burden of COVID-19 on the PI community. Furthermore, PIs are overrepresented in the essential workforce and are also more likely to have fewer financial resources, live in multigenerational households, and live in densely populated neighborhoods,<sup>13,24</sup> all of which exacerbates their risk of infection and transmission.

The purpose of this study is to explore and document the impacts of COVID-19 among PI adults living in Los Angeles County, home to one of the largest communities of PIs in the United States and one of the highest rates of COVID-19 infections in the United States. Underlying health conditions, overrepresentation in the essential workforce, living conditions, and limited financial resources potentially contribute to the high rates seen among PIs. However, we do not definitively know what is causing COVID-19 cases and mortality rates to be disproportionately high among this community nor how they have been experiencing the pandemic. Thus, we wanted to learn from PIs directly why they believe rates of COVID-19 infections are high in their communities and what health care professionals can do to lessen the burden of this disease. Beyond community-level issues, we also explored the impacts of COVID-19 at the individual level, particularly around areas such as mental health and well-being which have been previously documented as a priority needs area among PIs.<sup>25,26</sup>

### **Methods**

A mixed-methods approach was employed to understand the impacts of COVID-19 among PIs and their communities. Participants completed a brief online demographic questionnaire followed by a 45- to 60-min semi-structured one-on-one interview. Trained research staff recruited and interviewed a total of 14 PIs who met the eligibility criteria (i.e. self-identifying as PI, 18 years of

age and older, and live in Los Angeles County). Participants were recruited *via* convenience sampling methods previously used in a similar study among PIs.<sup>26</sup> Recruitment was done utilizing a flyer that was sent *via* email, posted on social media, or through word of mouth. Community leaders were also contacted to further promote the study and recruit participants. Due to varying rates of COVID-19 infections and differences in social restrictions and public services across counties and regions at the time, the study sample was limited to those living in Los Angeles County. The incentive for study participation was an electronic gift card which was emailed to each participant within 1 week after completion of the interview. All study-related procedures and materials were approved by the Institutional Review Board at California State University, Northridge (Approval Number: IRB-FY20-421).

#### Data collection

Compliant with COVID-19 restrictions, data collection took place virtually between August 2020 and January 2021. Research staff scheduled a meeting time with each participant. One day prior to the meeting, participants were sent a reminder with Zoom information. They were told that they can access Zoom *via* their computers through the Zoom link provided, through their mobile phones using a free Zoom app, or through telephone. Each participant had a unique Zoom session that was password protected. Once on Zoom, the interviewer sent the participant a link in the chat box to review the online consent form powered by Qualtrics. After the participant reviewed and signed the electronic consent form, they were directed to a brief Qualtrics questionnaire to collect demographic information. During that time, a PDF copy of the consent form was sent to the participants. In order to maintain confidentiality, the interviewer provided the participant a two-digit ID number which was used throughout the meeting and during transcription and analysis. Once finished with the short questionnaire, they were sent an electronic copy of the consent form through the chat box and the interview portion then begins.

#### Measures

The semi-structured, one-on-one interviews ranged from 45 to 60 min in length. Participants

were asked about two main areas: (1) reasons for high rates of COVID-19 cases among the PI community and its impacts on their community and (2) the impacts of COVID-19 on them as individuals. More specifically, participants were asked ‘We learned from Los Angeles County data that PIs have one of the highest numbers of COVID-19 cases in the county and one of the highest death rates. Why do you think PIs’ rates are so high?’ and ‘How has COVID-19 impacted people in your community? It can be around health, mental health, work, school, or anything you can think of’. We then asked each participant about their personal experiences with COVID-19. In particular, we asked about their experiences with getting tested for COVID-19, the results of the test, and how confident they felt in getting medical care. We also asked about the impacts of the pandemic on each participant with questions such as ‘How has the pandemic affected your mental health or your mental state of mind?’, ‘How do you feel emotionally?’, and ‘What worries you the most about this pandemic?’ Finally, we asked about their source of COVID-19 information and the types of information they want and need in order to make informed health decisions.

#### Data analysis

All interviews were audio recorded and later transcribed by the research team. To analyze the transcripts, a trained research team member and the Principal Investigator of the study used a method adapted from Glaser and Strauss’ ‘Coding Consensus, Co-occurrence, and Comparison’ system<sup>27</sup> whereby transcripts were independently coded by each person at a very general level and then segments of the transcripts were assigned codes based on *a priori* or emergent themes followed by a meeting to discuss the findings and come to a consensus on the codes and themes.

#### Results

A total of 14 PI adults participated in the one-on-one interviews. Participants ranged in age from 18 to 68 years (average age 39.2) and a majority were females (76%). Of the 14 participants, half (7) self-identified as Samoan, 4 as Chamorro, 1 as Tongan, and 2 as other PI (Table 1). More than half of those interviewed held a 4-year college degree or higher and were fully employed. Of those who were employed ( $n=10$ ), five were

**Table 1.** Demographic characteristics of study participants ( $n=14$ ).

	Frequency (%)
Gender	
Male	3
Female	11 (76%)
Mean age	39.2years
Ethnicity	
Chamorro	4
Samoan	7 (50%)
Tongan	1
Other Pacific Islander	2
Born in the United States	11
Educational attainment	
High school or GED	3
Some college	2
2-year associate degree	1
4-year degree (bachelor's degree)	5
Master's degree	3
Employment status	
Employed, full-time	9
Employed, part-time	1
Retired	1
Not employed	3
Working from home	5
Have any kind of health care coverage	13 (93%)
Married	5
Number of people in household (not including self)	
0	1
1–5	11
6–10	1
10+	1
Average household size (not including self)	4
Number got tested for COVID-19	9
Number tested positive for COVID-19	3
GED, General Educational Development.	

working remotely from their home. All but one participant had health insurance. The average household size, not including self, was four individuals but a few participants reported more than six people living in their homes. Of the 14 participants in our study, 9 participants got tested for COVID-19 and 3 tested positive.

### Community level

*Reasons for high rates.* According to the study participants, high rates of COVID-19 among the PI community were mainly due to (1) their jobs in the essential workforce, (2) their collectivistic way of life, (3) pre-existing health conditionals, and (4) overall health disparities gap. Some participants said that infection rates were high because PIs are essential workers who work outside the home, do not have another choice, and, thus, were more likely to be exposed to the virus than others:

A lot of our people are considered essential workers, and so with that kind of work that they do, they really have no choice ... it just kind of trickles down from there. (Female, 68)

~

PIs are far more likely to be essential workers so even if we could stay home, we can't ... we have to go work. Health insurance is tied to working and employment and so it puts folks in a really difficult position to decide between financial security and ... exposing yourself to a pandemic or not having health insurance and financial security but then ... not having money to pay for everything else. (Female, 32)

Many also said that the PI culture of collectivism, where gatherings with family and friends are a tradition and being affectionate and showing love is essential, may be another reason for these high rates:

Culturally, we are affectionate – where we hug, we kiss, we are a close-knit community, we attend each other's functions ... so I think Pacific Islander rates are high because it's all we know, it's what we're used to and so wearing of the mask, social distancing – it's something that we are not used to. Of course, it's the new norm, and it's for the better of our – it's for our own safety, but because it's – culturally we interact with each other in a close proximity quite often ... (Male, 37)

~

I believe it's because of the culture and our tradition. You know, we like to hug, we like to gather together, eating, all that kind of stuff, and it's harder for us not to. It's harder for us to wear masks – you know, it's kind of rude when you wear masks when you're in front of your family and the elderly, stuff like that. Even church, it's hard not to go to church and congregate with the people that you usually congregate with. I believe that's why it's harder for us Pacific Islanders, 'cause of our traditions and culture that we're used to. (Female, 56)

~

... the sense of community, I guess, that we all live by, you know, the whole idea that family gatherings are a huge part of the culture and then community gatherings are a huge part of the culture, and I think that probably has something to do with it. You know, the fact that even though we may still be trying to be safe, you know, trying to do our part, we're still sort of gathering and all it takes is that one person that, you know, who was exposed at the grocery store or something like to bring it to the home. (Male, 37)

Other interviewees cited pre-existing health conditions as being a reason for high rates of COVID-19 among the PI community:

I think that PI rates are so high because there are actually a lot of Pacific Islanders with pre-existing conditions ... a lot of Chamorros, they have more, you know, diabetes or high blood pressure. They are the ones that would be most susceptible to getting the disease and then also passing away from the disease. (Female, 36)

A few discussed the larger, more upstream, picture of health disparities as stemming from jobs, living in multigenerational households, issues with health insurance/access to health care, and lack of PI specific information as contributors of the high rates of COVID-19 among the PI community:

It has a lot do with our health disparities. We're essential workers. We tend to live in multi-generational households. Our lack of health care

coverage, 'cause of, you know, the majority of us being essential workers, and the expense of that all. (Female, 47)

~

There's not enough [PI] representation where they're not getting enough knowledge or information about the disease so they're kind of just relying on the news. (Female, 39)

*Impacts in the community.* When asked about the impacts of COVID-19 on the PI community, many issues were cited such as loss of loved ones due to COVID-19, loss of homes, and businesses, effects on school-age children, and health and mental health impacts. Just an overall interruption to lifestyle was what some participants have described:

It has impacted us in every way. Our way of gathering, cultural practice, our way of just being Pacific Islanders. The obligation of family and the obligation of, you know, our financial obligations, cultural obligations, so everything has changed. I think our community is also struggling with the online, you know, lack of intimate schooling, working from home. It's all over the board. (Female, 47)

~

We don't have any gatherings. Like a lot of the events that we were planning to be done in 2020 is not done. Like we had several weddings that was postponed ... I feel like it's driving us, it's making us so stressed out more and feel like we can't go anywhere. We feel restraint into our house. (Female, 30)

Participants cited loss of jobs as another impact of the pandemic and one participant described the challenges of finding a new job:

People have lost jobs. Trying to look for jobs in COVID is not the easiest thing. Everything went online, so as you're online looking for work, there's 150,000 other people looking for the same kind of work that you're looking for, and if you are a manual laborer or you don't have extraordinary skills or any of that, then you're just one of 150,000 – it's an employer's market. (Female, 68)

Several participants noted that because of the changes in lifestyles and the impacts to other sectors of their lives, mental health and mental well-being in the PI community are poor:

I think that it's definitely taking its toll on my community's overall mental health. I also think that it's just kind of ... difficult 'cause we're not able to engage in our usual coping strategies ... being isolated and then also having the anxiety ... if we do go out, getting exposed, can be difficult to deal with. (Female, 30)

~

It also has affected us in a negative way because we are people that are constantly working and, you know, attending church ... so ... I can see where it kind of creates a little sense of depression because we're not used to being confined to our homes. (Male, 37)

Since they are not able to talk and see family and friends as usual, their source of support has been compromised, which worsens mental health. One participant mentioned that the situation regarding mental health is made more challenging because it is a 'taboo' issue in his community:

Unless you have ... somebody in your corner that's gonna help you during these trying times ... it's just that ... some of that stuff is kind of taboo, too, as far as mental health ... And, like, that's a big thing ... especially the older folks ... As far as like the older generation – that's looked at as a taboo thing, so when you talk about mental health, when you talk about depression, you know, you talk about anxiety, talk about all these things, that's a – you know, I mean, I speak on behalf of myself, I can't generalize anything, but that's looked as a weakness. That's looked as – it's either you're stupid or you're crazy, or, you know, just, again, it's a sign of weakness, like, 'Hey, you know what, just get over it, because, you know, everything is hard', but, like, this has never happened before. I mean, as far as, like, how that has played on people's mental health, I mean you know, you get into this survivor mode and I don't think that's a healthy space to be in because then people get desperate, and then you don't know what you gonna do, especially in these desperate times. (Male, 41)

One participant mentioned that these negative impacts have always existed. The pandemic just heightened the issues among PIs:

I think it's just exacerbated a lot of things, right? Like the digital divide is always been true for our community where you know when you're poor it also means you usually don't have as much access to take technology to the Internet. So, you know now that everything is gone completely digital or virtual we're seeing that a lot of folks actually aren't able to access it or able to participate in education in ways that are actually helpful or fruitful for them. (Female, 32)

*Help.* When asked what health care providers and public health professionals like those in Los Angeles County can do to help the PI community, participants asked for more outreach and education. One participant suggested,

If you're directly like, 'Hey, man, you know what, you guys are hard-hit, man. Let me go into the community, let's go into the churches where the majority of your peoples is at', you know what I mean, 'let's go into the city's, man, where a majority of your folks is at, and let's get testing out there. Let's set it up at the parks, right, where a majority of your folks is at', you know what I mean. I don't see that ... (Male, 41)

~

I think education is key. I think if they provide education and also outreach and stress the importance of, you know, the social distancing and the importance of the wearing of the mask, washing of the hands, you know – after a while, it starts to sink in if you hear it over and over. (Male, 37)

Several participants suggested outreach and education that is specific to the PI community:

I think maybe addressing, like, the specific health concerns that Pacific Islanders typically face. I mean, even if it's just, you know, maybe they might not want to go to the doctor anymore because they're scared that they might get, you know, COVID-19 just by venturing out into – I don't know, maybe some education around how to, like, take care of their regular health, and not necessarily COVID-19-specific, but like – or providing, you know, so that you can get out of that pre-existing condition you might have. (Female, 36)

~

... we will listen to the news, but you know we kind of think it may not apply to us because we experience things very differently, culturally ... maybe there would be more of you know more information that we could take in, like ... how can we use that information and apply it into ... our community so I think it's very specific in that way. (Female, 39)

Another suggested more education on how to access medical care:

I guess more opportunities for them to have medical access, like a lot of Islanders needs more. They need to be more aware like some classes, where they could teach them how to get themselves covered, like medical insurance things like that to help him or then just having more access 'cause a lot of people are held back in going to the doctors 'cause they cannot afford doctors, that they are not covered. Yeah, I think that's one thing that we need is more access to medical help and assistance. (Female, 30)

As part of the assistance efforts, several participants called for more disaggregated data which will help to focus information and tailor help for the PI community:

I think disaggregating data. Not lumping us with the Asian community. You know, we have a slightly different lifestyle, and things that hinder us or guide us are different so without that specific information, it's difficult to really navigate the needs of our community ... LA County has been very instrumental in ensuring that the Pacific Islander community is mentioned, is disaggregated, and that they have shown and actually brought out that Pacific Islanders are the highest, you know, have the highest case rate have the highest death rate as a community. (Female, 47)

~

The disaggregation of data was a big deal ... Those are the numbers that people look at and they listen to; in being able to advocate for ourselves. (Female, 68)

### *Individual level*

*Testing.* We asked all participants a series of questions around their experiences with testing for COVID-19. As mentioned, 9 out of the 14 participants got tested for COVID-19, and of these 9,

3 tested positive and 6 tested negative. Participants who said they did not get tested for COVID-19 ( $n=5$ ) were asked why they did not get tested and many said that they did not think they were at risk and thus did not get tested. One participant mentioned that they wanted to get tested but was turned away because they did not have any symptoms:

I tried to get on to get tested and I [was] kept being told 'No' because I didn't have symptoms. After about, like, six times of that, I just finally gave up. (Female, 68)

Among participants who did get tested for COVID-19 but had negative test results, their experiences were similar. They felt relieved and happy when they learned of their negative result:

It was a relief because, you know, when it first came out – when the pandemic first broke out, it was like, you know, it was kind of scary because you really don't know who has COVID, so having the test done and then receiving the results was a breath of fresh air to, you know, to know that I was safe for the time being. (Male, 37)

For participants who tested negative or did not get tested at all, we asked if they felt confident that they would get needed medical care if they should ever test positive in the future and a majority answered 'yes' because they had health insurance. Among the three participants who tested positive for COVID-19, they shared that they quarantined at home, away from others, but felt confident in accessing needed medical care. One person mentioned they were scared when they found out the test results:

It's basically really hard on me because I never knew I could get, like, this sick. I've never been this sick. I've always thought I had a cold, but then I got really scared when I got it because after hearing all those news and stuff, so that's what made me scared about it, but, overall, the pain that I feel is really hard on me. (Female, 24)

*Impacts on the individual.* Participants were also asked about impacts on their own well-being and mental health. Many said they were worried most about their families, particularly their parents. Finances, jobs, and livelihood were also mentioned as being affected by the pandemic. Like the community-level impacts, mental health was

an issue for many individuals. One interviewee describes her mental health journey:

I feel like it went in stages. The first one was of course panic primarily because my work. I felt like they weren't taking it seriously. So, I just have a lot of anxiety and that uncertainty. And then after the lock down ... we still did not know what was happening or how you can contract it. I mean I stayed put inside my house I really don't want to leave 'cause the lack of information is there you go the lack of information of thinking that even if you would just go out there and you kind of even see someone like across the street like you think you would get it or like even breathing in just the air outside that you could get it somehow. So, that was a lot of anxiety for me and also kind of balancing working from home expectations of my work and my boss like as if this was still status quo. And then, you know I also had to deal with a death in the family who did get COVID and it was a matter of days that they passed. So also, just trying to reconcile, even till this day, to reconcile that happened because we weren't able to be there for my aunt. You know having to say goodbye on Zoom like to meet, it's still very surreal. (Female, 39)

Feelings of isolation and boredom from being isolated from others also took a toll on people. For many, being out of the house and seeing friends and family were forms of coping so not having that opportunity worsened mental well-being:

This pandemic did not help, and in particular ... not having access to the people or the things that I usually like used to manage my mental health. (Female, 32)

~

Sometimes I get depressed 'cause I can't see people I usually see, go places I usually go, you know, like just the simplest thing of eating in a restaurant, sitting down and enjoying that, you know, and it gets to you. (Female, 56)

One participant described having anxieties because of COVID-19-related racism and anti-Asian sentiments:

What I would say is I think there just been an over generalization. When people or when it came about

that this started in Wuhan, China and it got here like the information of that virus got here. I think everyone that was under like the Asian umbrella or Pacific Islander umbrella was targeted as we could be carriers of this virus and so it led to me having anxiety with how my parents might be treated if they were out and about by themselves. That fear of my parents being targeted and I'm not around, I think that's mostly what I saw in terms of that community mean for targeted as being carriers or that we were the spreaders of this disease. (Female, 39)

A few participants mentioned some positive impacts of COVID-19, which included additional time to spend with family and an increased sense of awareness about the health disparities that existed in the PI communities.

Finally, we asked participants what additional information they would like to get about COVID-19 and six of the participants said they wanted information about a cure or vaccine, four said they wanted information about ways to prevent themselves from getting the virus, in particular through in-language education materials, one just wanted accurate information, one wanted information about accessing services, one said information about what is happening in other countries, and one wanted to learn about the lingering effects of COVID-19 (i.e. long COVID). One participant in particular mentioned that they wanted to know more information about vaccines for PIs because clinical trials for the vaccine did not include enough PIs due to them having too many underlying health conditions and thus they were not sure if the vaccines will work for PIs:

I've seen a lot of interest and like curiosity from folks is around vaccine trials, so I think that's the thing I want to like stay up to date on. I think the difficulty with vaccine trials especially for the Pacific Islander community is like if underlying conditions are what make us most vulnerable but vaccine trials prioritize testing on 'healthy people', it means that the vast majority of our population would be excluded from these trials and that a vaccine will come out that will most likely not have been tested on PIs ... when it comes out I won't even know if it will work for myself and other communities and so I think the stuff that I would want to know more about around COVID-19 and want to understand the vaccines and that process. (Female, 32)



## Discussion

Corroborating with existing empirical evidence and knowledge, we learned that high rates of COVID-19 among PIs are a result of existing health and socio-environmental conditions. As described previously, PIs have one of the highest rates of pre-existing chronic medical conditions in the United States,<sup>19,20</sup> putting them at higher risk of COVID-19 and related complications. Factors such as their overrepresentation in the essential workforce places PIs at higher risk of infection and higher risk of job insecurity during the pandemic which exacerbates health and mental health issues. The Los Angeles County Department of Public Health, in collaboration with the Southern California Pacific Islander COVID-19 Response Team, listed three main socio-environmental factors that exacerbate the disease among PIs, namely, (1) large families living in close proximity, (2) multigenerational households, and (3) a culture of gatherings and large celebrations.<sup>28</sup> Participants of our study also described how living in close proximity to their families and living in multigenerational households exacerbates the problem. They further described the importance of social gatherings which serve as a venue for people to gather, celebrate, and connect in the PI community, a mainly collectivistic community.<sup>29-31</sup>

Results of this study document the significant impact of COVID-19 on PI health, mental health, and way of life. Besides the impacts of the pandemic on health, finances, jobs, and housing, participants of this study described how mental health was heavily impacted. Social isolation, anxiety, stress, and boredom were mentioned by several participants. Being isolated from family and friends and not being able to engage in gatherings and celebrations, which are typical in the PI community, have made the pandemic more difficult and worsened mental state of mind. A few participants described the social gatherings as a way that they relieve stress, make connections with others, and improve their mental health. Thus, not having this form of therapy made life more difficult for them. This is concerning given recent literature citing increased rates of mental health issues and lower access and use of mental health services among PIs.<sup>25,26</sup>

### *What is currently being done to address COVID-19 among PIs?*

Aligned with our study participants who expressed a need for more outreach and education about

the dangers of COVID-19 and how to protect themselves and their families, PI community leaders have come together to address the impacts of this pandemic in their communities. Established in 2020, the Pacific Islander COVID-19 Response Team plans and implements programs and strategies to inform and support families and communities affected by COVID-19. The response team is a national group of Native Hawaiian and other PI researchers, health experts, community leaders, and advocates who came together with a mission to support the PI community.<sup>32</sup> They have created a digital library of resources for the community and developed and disseminated multiple educational materials to the PI community such as *Woven with Elders: Pacific Islander Vaccine Toolkit*. This toolkit includes information about risk factors for COVID-19, COVID-19 vaccine safety, dispels vaccine-related myths, and provides information about why PIs should get vaccinated. Locally, this group is known as the Southern California Pacific Islander COVID-19 Response Team (SoCal PICRT) and consists of community leaders from Los Angeles County and surrounding areas. SoCal PICRT provides resources to PIs around the Los Angeles area including information about where to get vaccinated, answers questions and concerns about COVID-19, provides assistance to those who test positive, and maintains links to data dashboards for several counties in the southern California region (<https://www.pacificislanderhealth.org/>). In addition, the Native Hawaiian and Pacific Islander COVID-19 Data Policy Lab at the UCLA's Center for Health Policy Research provides up-to-date data on NHPI COVID-19 cases in the United States by state (<https://healthpolicy.ucla.edu/health-profiles/Pages/NHPI-COVID-19-Dashboard.aspx>). Created to address the needs of PIs and collaborate PI community leaders and researchers, the 'Lab' serves as the main data dashboard for all data related to PIs and COVID-19 at the local, state, and national levels.<sup>16</sup> Collectively, these efforts have supported community members, leaders, health professionals, and researchers alike in addressing COVID-19 among the PI community.

### *Limitations*

Several limitations should be noted about the findings in this study. First, a majority of participants in this study were well educated and have health insurance. This is in contrast to the general

PI population where only 17.8% of PI adults aged 25 years or older have a bachelor's degree (compared with 33.5% in Whites)<sup>33</sup> and 9.1% were uninsured (compared with 6.3% in Whites).<sup>34</sup> Findings from this study may not be representative of the experiences faced by other PIs who may be more disadvantaged than the participants of this study. Our findings may underrepresent the burden and hardships experienced by the neediest members of the PI community as a result of the pandemic. Second, this study utilized convenience sampling methods and only drew participants from Los Angeles County, a county with one of the highest rates of COVID-19 in the country, and thus findings might not be reflective of PIs living in other parts of the United States.

### Implications

Upstream factors linked to high transmission rates of COVID-19 such as those described by participants of this study are the same factors that have been widening the health disparities gap among PIs prior to the pandemic and thus places them at higher risk of COVID-19-related morbidity and mortality. Findings from this study will help further inform public health professionals, researchers, and others who work with the PI community and have the ability to make changes upstream, to collectively address and reduce the health and mental health burden of this pandemic. This study offers insight on the extent of COVID-19's impact on individual and community levels in PIs. With this information and others like ours, implementation of programs, initiatives, or policies for the community can be better met and delivered effectively.

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### Author contribution(s)

**Patchareeya P. Kwan:** Conceptualization; Data curation; Formal analysis; Methodology; Project administration; Supervision; Validation; Visualization; Writing – original draft; Writing – review & editing.

**Shenazar Esmundo:** Data curation; Methodology; Visualization; Writing – review & editing.

**Eugene Andrea Rivas:** Methodology; Writing – review & editing.

**Danielle Erika Co:** Writing – review & editing.

**Melanie Sabado-Liwag:** Conceptualization; Writing – review & editing.

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