

Identifying the Physical and Emotional Needs of Health Care Workers in Hawai'i During the COVID-19 Pandemic

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Abstract

A mixed-methods study was performed to identify the physical and emotional needs of Hawai'i health care workers during the COVID-19 pandemic, and the degree to which these needs are being met by their clinic or hospital. Qualitative interviews and demographic surveys were conducted with two cohorts of health care workers. Cohort 1 (N=15) was interviewed between July 20 - August 7, 2020, and Cohort 2 (N=16) between September 28 - October 9, 2020. A thematic analysis of the interview data was then performed. Participants' primary concern was contracting the illness at work and transmitting it to their families. Solo practitioners working in outpatient clinics reported more financial challenges and greater difficulty obtaining PPE than those employed by hospitals or group practices. While telehealth visits increased for both in-patient and out-patient settings, the new visit type introduced new barriers to entry for patients. The study findings may serve to better understand the effect of COVID-19 on health care workers and support the development of hospital and clinic procedures. Further research into the impacts of COVID-19 on nurses in Hawai'i is recommended.

Keywords

Coronavirus, COVID-19, Health Care Worker, Physical Health, Emotional Health, Hawai'i, Health Care

Introduction

COVID-19 is a highly infectious disease caused by SARS-CoV-2 that was first identified in Wuhan, China.¹ Posing significant morbidity and mortality, the virus has created feelings of fear and anxiety among health care workers (HCWs). Social distancing mandates and shelter-in-place policies have been created to protect members of the community and stop the spread of the disease. For HCWs, these shelter-in-place policies are not possible to follow since their work is essential for the health of their communities. The COVID-19 pandemic has created vulnerabilities among HCWs by exposing weak spots in the health care system. Health systems in major cities are under unprecedented strain from the high demand for health care in hospitals and intensive care units (ICUs).² There was also a shortage of personal protective equipment (PPE) in the hospitals and a limited amount to adequately protect HCWs as they dealt with the incoming amounts of patients.³

Health Care Worker Mental Health Outcomes

During major epidemics, there is an increase in demand for HCWs, putting them in a vulnerable position for increased levels of anxiety from long work hours and limited resources.⁴

A cross-sectional study in China between January 29, 2020 and February 3, 2020 identified that medical staff experienced more moderate to severe fear related to COVID-19 than administrative staff, 70.6% and 58.4% respectively.⁵ Further research conducted with medical staff in China indicated that 50.4% of participants reported symptoms of depression, 44.6% endorsed anxiety symptoms, 34.0% insomnia, and 71.5% distress.⁶ Those directly treating patients on the front line also experienced more psychiatric symptoms than those on the second line.⁶ Interestingly, there were lower rates of burnout among medical staff working with COVID-19 patients due to an increase in a sense of personal accomplishment.^{7,8}

Lessons from Previous Outbreaks

As noted, the impact of the COVID-19 pandemic has had significant negative effects on the emotional health and well-being of HCWs. The aforementioned negative effects are similar to those experienced following other pandemics. For example, one year after the global SARS outbreak in 2003, HCWs exhibited significantly higher levels of psychological distress than non-HCWs in all dimensions including post-traumatic stress, depression, anxiety, intrusion, avoidance, and hyperarousal.⁹

The psychological distress of working during an outbreak may also lead to more absenteeism among HCWs. Previous studies have shown that the provider's willingness and ability to work changes during a pandemic situation.¹⁰ One study found that if HCWs were asked to go to work during an influenza pandemic, 28% would be unlikely to respond.¹¹ However, another study conducted during the A/H1N1 pandemic showed that most HCWs would continue working despite the possible risks.¹²

Disparities among Female Health Care Workers

Although infectious outbreaks can impact HCWs in different ways, female HCWs appear to be more vulnerable to developing negative mental health outcomes. Female health care providers make up 88.2% of registered nurses and 36% of physicians.^{13,14} Female HCWs exposed to COVID-19 in China were found to have more severe symptoms of depression, anxiety, and distress than male HCWs.⁶ Female HCWs were also found to be more likely to have primary responsibility for household chores, making it more difficult for them to have a positive work-life balance.^{15,16} For some female HCWs, an increase in hours

because of COVID-19 led to unsatisfactory work-life balance, an increase in work-family conflicts, and the development of adverse psychological health effects.

Purpose of this Study

Limited research has been conducted on the impact of COVID-19 on the physical and emotional health of HCWs in Hawai‘i during the time of this study. The main objective of this study was to identify how COVID-19 has affected the physical and emotional health of HCWs in Hawai‘i.

Methods

Original Study Design

Key-informant interviews were conducted with HCWs in the state of Hawai‘i about their experiences with COVID-19. This study was reviewed and approved by the University of Hawai‘i at Mānoa Human Studies Program (Protocol ID: 2020-00511). Participants were a convenience sample of HCWs identified through the snowball sampling method. Identified individuals were asked to provide the name of colleagues they knew who might be interested in participating. Once 16 participants were recruited and interviewed, all recruitment stopped. The inclusion criteria required participants to be HCWs (i.e., physicians or nurses) who worked in a hospital and/or clinic, adults over eighteen years old, and individuals who worked with patients during the pandemic. Participation was not restricted to those who interacted with known COVID-19 cases, as the risk of exposure during a pandemic existed in any direct patient interaction. Participants were offered a \$20 gift card to CVS or Starbucks as a thank you for their participation.

Some interview questions included: “How has your sense of physical and emotional safety and security in the workplace changed since the beginning of COVID-19?” and “How have

these experiences changed the way you will do your work moving forward?”

IRB Changes

The total number of participants was expanded from the original 16 to 35 participants to include a second round of interviews. The purpose of these added interviews was to gather information on the spike in COVID-19 cases in the state of Hawai‘i which occurred during August and September 2020, which prompted the lockdown on August 27, 2020. The questions asked during the interviews were the same to allow for comparisons between the two data collection periods. However, the option of “unsure of COVID-19 exposure” was added to the survey question regarding exposure because many participants were unsure or categorized exposure as “never”.

In total, thirty-one participants were recruited in two cohorts (N=15, N=16). Each data collection period occurred between July 20 and August 7 or September 27 and October 17 of 2020 (Figure 1).

Questionnaire Design

The interviews consisted of 12 closed-ended, demographic questions and 10 open-ended, semi-structured questions. As COVID-19 was a rapidly-evolving situation, the questions were designed to document issues and concerns that were emerging in literature and media coverage during the pandemic response. The questions were developed and selected under the guidance of a clinical psychologist. Closed-end questions were used to gather basic demographic data on the individual and their health care setting. The open-ended interview questions asked for: (1) participants’ perspectives on the impact of the COVID-19 pandemic on their wellbeing in their health care setting; (2) how their needs are being met by their employer; and (3) their ideas about how to best ensure their physical and emotional safety.

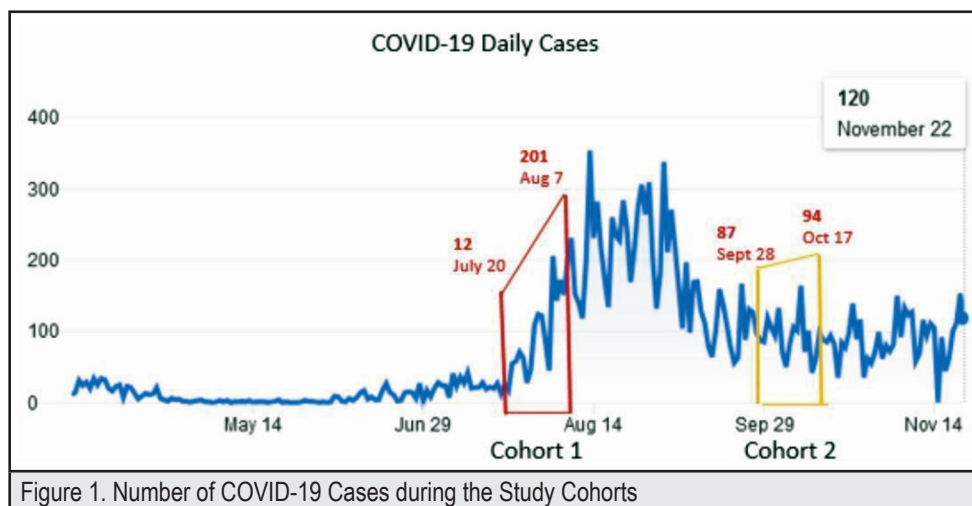


Figure 1. Number of COVID-19 Cases during the Study Cohorts

Note. This figure depicts Hawai‘i’s cases count from the beginning of the pandemic through the point of data collection of cohort 1 and 2.¹⁸

Study Protocol

A team of two researchers worked together to conduct the interviews, which were recorded through audio-only Zoom sessions. Each interview session lasted approximately 1 hour. The first 15 minutes were dedicated to reviewing the consent form, obtaining oral consent, and administering the demographic survey. The rest of the interview was dedicated to the 10 open-ended interview questions. Transcripts were coded and a thematic analysis was performed by identifying recurring subject matter, thoughts, and concerns that were mentioned and related to participants' stressors and needs.

Results

Demographic Surveys

Participants self-reported their occupation and their work setting prior to the pandemic, whether they were in a clinic (outpatient), a hospital (inpatient), or a mix of both. Survey participants included 28 physicians and 3 registered nurses, with all three nurses working in acute care settings within hospitals. More than half (54%) of the participants were primary care physicians, with 23% working in mixed settings and 32% exclusively in the hospital (Table 1).

Participants were asked about their degree of worry about the COVID-19 pandemic, their overall wellbeing at the beginning of the pandemic as well as their degree of worry at the time of the survey. HCWs in Cohort 1 self-reported a higher level of worry at the time of the interview compared to the beginning of the pandemic, whereas Cohort 2 showed the opposite (Figure 2). This is supported by the increase in mean levels of worry from the beginning of the pandemic until the time of the assessment for Cohort 1 and a decrease for Cohort 2.

| Characteristic | Cohort 1 (n=15) | | Cohort 2 (n=16) | | Both Cohorts (n=31) | |
|-----------------------|-----------------|----|-----------------|----|---------------------|----|
| | n | % | n | % | n | % |
| Gender | | | | | | |
| Female | 7 | 47 | 13 | 81 | 20 | 65 |
| Male | 8 | 53 | 3 | 19 | 11 | 35 |
| Age | | | | | | |
| 18-30 Years Old | 2 | 13 | 1 | 6 | 2 | 6 |
| 31-39 Years Old | 6 | 40 | 6 | 38 | 12 | 39 |
| 40-49 Years Old | 4 | 27 | 5 | 31 | 9 | 29 |
| 50-59 Years Old | 2 | 13 | 3 | 19 | 5 | 16 |
| 60+ Years Old | 1 | 7 | 1 | 6 | 2 | 6 |
| Race/Ethnicity | | | | | | |
| Caucasian | 3 | 20 | 5 | 31 | 8 | 26 |
| Filipino | 4 | 27 | 3 | 19 | 7 | 23 |
| Chinese | 3 | 0 | 2 | 13 | 5 | 16 |
| Japanese | 1 | 44 | 1 | 6 | 2 | 6 |
| Other Asian | 1 | 54 | 1 | 6 | 2 | 6 |
| Mixed Ethnicity | 3 | 20 | 3 | 19 | 6 | 19 |
| South Asian | 0 | 0 | 1 | 6 | 1 | 3 |
| Provider Type | | | | | | |
| Physician | 14 | 93 | 14 | 88 | 28 | 90 |
| Registered Nurse | 1 | 7 | 2 | 13 | 3 | 10 |
| Specialty | | | | | | |
| Primary Care | 10 | 67 | 6 | 38 | 16 | 52 |
| ICU | 3 | 20 | 4 | 25 | 7 | 23 |
| Other Specialty | 2 | 13 | 6 | 38 | 8 | 26 |
| Work Setting | | | | | | |
| Clinic | 11 | 73 | 3 | 19 | 14 | 45 |
| Hospital | 3 | 20 | 7 | 44 | 10 | 32 |
| Mixed | 1 | 13 | 6 | 38 | 7 | 23 |

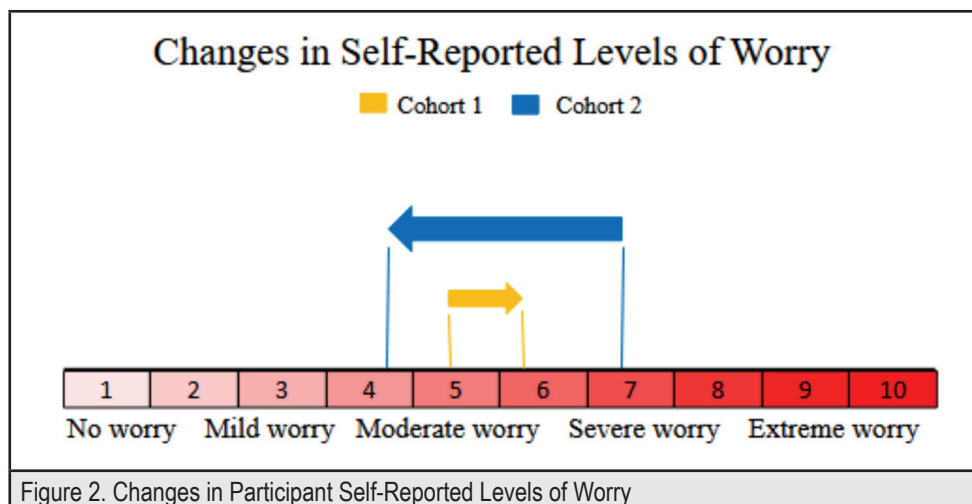


Figure 2. Changes in Participant Self-Reported Levels of Worry

Note. For Cohort 1, the mean worry in participants increased from 5.7 to 6.3 as time continued. In Cohort 2, the mean worry decreased from 7.4 to 4.3 as time continued.

The survey data assessing the levels of worry suggests that hospitals and clinics have better-supported HCWs in Hawai'i as the pandemic has continued. When comparing the levels of worry for both cohorts to the number of current cases, the increase in cases is reflected in the increase in mean worry. Cohort 1 was measured between July 12 and August 7, 2020 where Hawai'i experienced a drastic increase from 12 cases to 201 new cases, respectively.¹⁷ The increase in cases is reflected in the rise of worry level among participants, with the mean current level of worry rising by 6%. After the spike in cases during August and early September, cases decreased and Cohort 2 expressed a decrease in worry from initial worry to a mean present worry by 31%.¹⁷

Interviews

1. Emotional Effects

The interview results revealed several common themes in both cohorts. The emotional effects on the individuals were largely negative. In particular, participants expressed anxiety and paranoia over the possibility of contracting COVID-19 at work and unknowingly transmitting the virus to their loved ones or colleagues. One participant stated, *"Every day that you go to work you [are] worried about someone in your team is going to get sick, that someone will die from your team."*

Participants reported feelings of frustration towards their employer, the state, or federal government for not making changes to better support and protect health care workers. Other points of frustration were towards individuals who didn't wear masks or follow social distancing mandates. Another participant stated, *"There are people that don't believe what they see on the news or what you do in the hospital, and it undermines what you do at work."*

Participants observed that their mental health improved with consistent knowledge of best practices for PPE that they could use in medical practice.

2. Physical Effects

A majority of the participants in both groups reported lower levels of physical activity because of the closure of gyms. However, some physicians who started working from home reported an increase in physical activity because the time usually spent commuting was able to be dedicated to exercising. These participants also stated that they were able to spend more time with their family since they were all together in the same house. Individual health concerns primarily focused on weight changes.

In both cohorts, individuals reported being more meticulous about their hygiene and environment to protect themselves, colleagues, and family. Several participants reported that there

had been a loss of opportunities for themselves and their family members. The loss of opportunities included networking opportunities while physically attending conferences rather than virtually and the inability of participants' children to move away to attend college due to the switch to online learning.

Participants in hospital settings expressed feeling drained from physically going to work and having to wear PPE. Participants who worked in the ICU felt safer working and wearing their full PPE gear than outside of work. Other participants, who worked in out-patient settings, felt safer when their workplace culture promoted an increase in diligence with social distancing and use of PPE.

3. Workplace Effects

Participants noted a change in their workplaces. Some reported that having to switch between telehealth and in-person visits altered their workflow. Social distancing contributed to less socialization during downtime between coworkers.

Participants noted that the pandemic generated an increase in communication within group practices and hospital systems. Participants reported communicating with coworkers from different locations more frequently than before the pandemic. Participants mostly felt positive regarding the initial response of hospitals and health care organizations on the island, but others also noted that there could have been a more cooperative response between the different medical systems as a whole.

Other effects reported were a more tolerant workplace for family leave and burnout prevention. Participants in academic roles observed the loss of mentorship, learning opportunities, and critical clinical experiences in rotations for residents and medical students.

4. Telehealth and Patient Care

Nearly all physicians reported an increase in the use of telehealth, regardless of whether they practiced in a hospital or clinic setting. Several mentioned medical practice has been less fulfilling since PPE has made communication and the connection between patient and provider more difficult. Some participants experienced discomfort wearing masks due to the constant pressure on their faces. All mentioned that they are more cautious around patients and experienced an increase in difficulty when communicating with patients since wearing PPE hid facial expressions and muffled sounds.

All physicians believed that telehealth is a good option for both the patient and provider and will be used much more frequently in the future. Some participants working in private practice have started using telehealth for almost all patient care, switching from in-person care to virtual care. Some providers identified finding appropriate telehealth platforms for their unique work

environments to be a major challenge, and noted barriers for elderly and underserved populations such as poor internet connectivity and low technological literacy. While some health care providers were initially concerned about negative outcomes such as a decline in the quality of conversation, they reported being pleasantly surprised that was not the case.

5. Private Practice Challenges

Clinicians reported more financial challenges than those employed by hospitals or group practices. Many clinics closed at the beginning of the pandemic and began to see fewer patients to follow social distancing guidelines. Spacing out appointments to reduce crowded waiting rooms, and facing more cancellations and no-shows caused clinics to experience financial losses during the pandemic. Payment protection loans were utilized to avoid laying off staff. *“Finances scary at first, so there were few patients at first... But with the payment protection program, that helped.”*

Physicians who worked in clinical settings or owned private practices reported that clinics were less supported in sourcing PPE than hospitals. *“The hospital provided all of the appropriate PPE that we needed... What was lacking was that same stash of equipment that I did not have for my staff.”* These challenges included having their usual suppliers favor hospital orders over their business, price gouging of needed supplies, or needing to make new purchases such as plexiglass for barriers. Individual private practices reported that free PPE programs from community medical associations or the City and County of Honolulu’s “Back On the Wave” program were beneficial resources.

6. Mental Health Resources

Participants’ experiences of mental health resources were mixed, with some reporting no resources or support, while others identified multiple resources. A majority of participants in hospital settings were aware of counseling services and hotlines being offered, but never personally felt the need to utilize them. Several observed that chaplains were also available to them on different department floors with light refreshments.

Participants identified a variety of services offered, including counseling, meditation, yoga, relaxation apps, free lunch offered by their hospital, and a hotel program. The services utilized by participants most frequently were the relaxation apps, free lunch, and the hotel program. Participants reported the most useful resources were the rapid tests, daily COVID meetings, and UV sanitation for N95 masks.

7. Regional Attitude

In both cohorts, individuals reported feeling fortunate to live in Hawai‘i since there have been fewer cases in the state compared to the continental US. A majority felt positively towards

COVID-19 response from hospitals and organizations in the state, but noted the coordination between the different medical systems (hospitals, clinics, organizations, etc.) could have been improved. Participants in the first cohort attributed the low cases to the fact that Hawai‘i was geographically isolated, which prompted stricter travel restrictions.

“We are an island with relatively low resources. Any spike [in positive cases], we will run out of our capabilities. We can’t easily send a patient to another hospital if all our hospitals are full.”

Cultural differences between Hawai‘i and the continental US were frequently mentioned. Participants identified local attitudes and the emphasis on family and community to be the reason for low case numbers. Multigenerational housing in Hawai‘i was identified as a contributing factor to community spread. When reflecting on Hawai‘i’s surge in cases in comparison to those in other COVID-19 hotspots, one participant reflected: *“We got off easy, because when our surge happened, we were ready...we didn’t have to experience it like they had.”*

Differences between Cohort 1 and Cohort 2

Several participants in Cohort 1 reported the feeling of working hard, but not doing enough. This sentiment was not repeated in the second cohort. Some participants in Cohort 2 reflected on the possibility that Hawai‘i had a false sense of security at the beginning of the pandemic since the islands were geographically isolated.

Participants in Cohort 2 discussed several workplace effects from COVID-19 not previously mentioned. Participants expressed concerns regarding the inability to social distance in the break-room, the slowdown in workflow due to lost time spent putting on and taking off PPE, the need to retest patients for COVID-19 as a precaution against false negative readings, having enough trained staff to use certain equipment, and the importance of effectively redistributing and utilizing staff where needed.

The survey data assessing the levels of worry suggests that hospitals and clinics have better-supported HCWs in Hawai‘i as the pandemic has continued. When comparing the levels of worry for both cohorts to the number of current cases, the increase in cases is reflected through the increase in mean worry. Cohort 1 was measured between July 12th and August 7th where Hawai‘i experienced a drastic increase from 12 cases to 201 new cases respectively.¹⁷ The increase in cases is reflected in the rise of worry level among participants, with the mean current level of worry rising by 6%. After the spike in cases during August and early September, cases decreased and Cohort 2 expressed a 31% decrease in worry from initial worry to a mean present worry.¹⁷

Discussion

The study identified a need for additional mental health resources offered by employers. Resources found to be helpful to participants in clinics were based on workplace communication, clear information of what supplies were available, and flexible work environments. Participants were concerned that new “forgiving” workplace attitudes that emerged from COVID-19, would be diminished after the pandemic subsides. These new workplace attitudes included increased leniency toward leave for child care or to prevent burnout. It is recommended that employers support initiatives to improve work culture in support of positive work environments.

In the clinical setting, clinicians in independent practices cited difficulty in obtaining and affording PPE supplies. They noted the importance of grants from local governments to obtain PPE, community medical organizations that allowed for the ability of group purchases, and donations from patients. In both outpatient and hospital settings, physicians stated they felt safer in their workplace since PPE was easier to access.

Participants working in outpatient clinics reported that PPE was more difficult to source because distributors favored hospital client orders and clinics had less financial support to afford new supplies. Generally, outpatient clinic staff were limited to surgical or cloth face mask use, social distancing, and hand-washing as basic safety exposures. This led participants to worry that COVID-19 transmission is more likely to occur in clinics than in hospitals where full PPE equipment could be used to see patients. Perceived hoarding of PPE from hospitals was a point of frustration for clinicians. It is recommended that medical systems regulate their PPE stores and create a system for appropriate distribution between clinic and hospital settings.

The decrease in worry among Cohort 2 may be due to the fact that participants already experienced the surge in COVID cases and had a lower number of cases at the time of their interviews. Another contributing factor could be that Cohort 2 had new information regarding COVID-19 that was not available to Cohort 1 and hospitals and clinics had taken advantage of the brief period to adjust policies and workflows as seen fit.

Limitations

The overwhelming majority of the participants were physicians, leaving nurses and other HCWs underrepresented. During re-

cruitment, some nurses declined to participate due to concerns about their ability to speak freely about COVID-19 and their workplaces. This area may need to be explored further.

The survey question regarding ethnicity did not account for participants who were of mixed ethnicities and grouped them together as “mixed”. The survey question regarding health care settings also categorized those who worked in multiple settings as “mixed”.

There is a lack of research studies on COVID-19 and the impact specifically in Hawai‘i. The effects of COVID-19 are still ongoing and further investigation into this topic is suggested.

Conclusions

Key resources and services that contributed to HCWs’ sense of safety included available PPE, good communication and leadership from employers to HCWs, and new information regarding best practices against COVID-19. The differences in workplace effects point to that as the COVID-19 pandemic changes and develops so must hospitals and clinics in order to effectively respond to the needs of the community and staff.

Conflict of Interest

None of the authors identify a conflict of interest.

Acknowledgements

First authorship is shared with Amelia R. Arechy, for equally contributing to the writing and research project of this article.

This project was funded by the National Institute on Minority Health and Health Disparities of the National Institutes of Health (T32MD008636) through the Minority Health Research Training Program. The content of this article is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Minority Health and Health Disparities of the National Institutes of Health.

Thank you to Dr. Angela Sy and Dr. Vivek R. Nerurkar for their mentorship as Program Directors for the Minority Health Research Training Program at the John A Burns School of Medicine. Maraming Salamat to Dr. Seiji Yamada in his generous assistance in the recruitment of participants.

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