

A Report on the Impact of the COVID-19 Pandemic on the Health and Social Welfare in the County of Maui, Hawai'i

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Abstract

The Community Care Outreach Unit of the Hawai'i Emergency Management Agency (HI-EMA) Medical/Public Health Branch conducted a survey to gauge the impact, needs, and threats to the health and social welfare of individuals and their families pertaining to coronavirus disease 2019 (COVID-19). This article presents key findings for the County of Maui (MC) in the state. A mixed-methods framework was utilized for survey distribution and recruitment of participants from across the state. Recruitment strategies included snowball sampling via website and social media, and paper surveys. Descriptive analysis of the data is presented to give a basic overview of the impact of COVID-19 in MC. A total of 883 participants in MC responded to the survey. Approximately one-third reported that they or family members experienced reduced work hours or lost their job because of COVID-19. In all questions related to paying for essential living needs, the percentage of participants who expected to have future problems was higher than the percentage who reported having current problems. Of those preparing for the fall 2020 school semester, expected challenges included lack of funds to purchase school supplies, lack of face coverings, and language barriers. Most participants in MC perceived the severity of COVID-19 to be moderate to very high, and there was a moderate level of knowledge about which groups are more at risk for contracting severe COVID-19. Less than half would know how to provide care for someone in their family with COVID-19. Several resource barriers for caring for a family member with COVID-19 were identified. The COVID-19 pandemic has had a more severe impact on Native Hawaiian and Pacific Islander groups compared to others in the county. The results may provide a baseline for understanding the impact, needs, and threats to the health and social welfare of individuals and their families in MC. Local stakeholders can utilize this information to develop priorities, strategies, and programs to address the COVID-19 pandemic response in MC.

Abbreviations and Acronyms

CCO Unit = Community Care Outreach Unit
CDC = Centers for Disease Control and Prevention
COVID-19 = coronavirus disease 2019
HI-EMA = Hawai'i Emergency Management Agency
MC = County of Maui
NH = Native Hawaiian
PHQ-4 = Patient Health Questionnaire-4
PI = Pacific Islander (PI)

Introduction

At the time of this publication the COVID-19 pandemic continues in the state of Hawai'i and most places across the world. Nearly all communities and countries have been adversely impacted by this historic event. As of July 2, 2021, there have been 36 120 cases of the coronavirus disease 2019 (COVID-19) recorded

in the state of Hawai'i since its first case in March 2020.¹ The County of Maui (MC), which includes the islands of Maui, Lāna'i, and Moloka'i, has recorded 4049 cases, 57 deaths, and 288 hospitalizations.¹ The proportion of cases in MC (11.2% of Hawai'i's COVID-19 cases) is comparable to the county's proportion of the state's population, which is 11.8%.²

MC has experienced 3 surges of COVID-19 cases, the first in March-April 2020, the second in July-September 2020, and the third beginning in October 2020. The second surge was the most significant, with the highest number of new cases reported each week; the third surge was primarily attributed to community spread related to holiday gatherings. Mid-October, 2020 is also when travel restrictions were eased to allow trans-Pacific and interisland travelers to participate in the pre-travel testing program, however travel-related cases account for only a small portion of the cases.³ MC COVID-19 cases have a 14-day average of 5 new cases per day as of July 2, 2021.¹

In order to address the impact of COVID-19, the Community Care and Outreach Unit (CCO Unit) under the Hawai'i Emergency Management Agency (HI-EMA) Coordinated Medical Services Branch conducted a survey to assess the impact of COVID-19 on the population. The purpose of the assessment was to identify the impact of COVID-19 on the health and social welfare of the individuals in Hawai'i and identify strategies to mitigate the adverse outcomes. Assessment data was collected from individuals across the state during a period of three weeks (August 12-September 5, 2020). During this time the COVID-19 pandemic in the state was at its peak and public officials and citizens were all very concerned for the health and safety for citizens of the state. The findings for the state as a whole, as well as other Hawai'i counties and identified vulnerable groups that include Native Hawaiian (NH), Pacific Islander (PI), and Filipino, are reported elsewhere.⁴ This report provides findings that are specific to MC.

Methods

Subject-matter experts from the CCO Unit, along with community partners and key health and social service organizations, collaborated to conduct the survey. The survey instrument contained 35 questions, which collected information about demographics, household profiles, health and well-being, family finances, social welfare, and personal beliefs and activities

regarding COVID-19.³ The survey also included 4 questions from the Patient Health Questionnaire-4 (PHQ-4) to assess mental health.⁴

A convenience sample, mixed-methods framework was utilized for the survey distribution and recruitment of participants from across the state, with special outreach to vulnerable populations. Recruitment strategies included snowball sampling via website and social media advertisements, word-of-mouth, and paper surveys that included return postage mailers. Paper surveys were also available for in-person completion at agency sites, community-meeting places, and homeless outreach clinics, with community partners available to assist individuals with completing the survey online or in-person. Details regarding the survey tool are published elsewhere.⁴ The data provided here are drawn from the larger survey that was distributed across the state. Descriptive analyses of the MC data are presented to give a basic overview of the impact of COVID-19 on residents of MC.

Results

In MC, 583 individuals responded to the survey. This represents 7.4% of the total statewide survey respondents (N=7927). MC has 167 417 residents, which represents 11.3% of the state population.² Each respondent provided a zip code of residence, and these were used to map the respondents across the county (see Figure 1 for distribution of respondents).

Demographics

Nearly three-fourths of the survey respondents were female (72.2%), 124 (21.4%) male, and 37 (6.4%) other gender. About one-quarter (24.9%) of respondents in MC were between 18-34 years of age, 42% were middle-aged (between 35-54 years), and 32.8% were older (55+ years). Of the 583 respondents in MC who responded to the questions about which race/ethnicity they identified with, 34% reported identity with more than 1 race/ethnicity group. Caucasian, Japanese, NH, Filipino, and Chinese were the most predominant groups. When asked which 1 group participants most closely identified with, the percentages changed for multiple groups, however, the order of frequency remained the same for the top 4: Caucasian, NH, Filipino, and Japanese. As an identified vulnerable group, the percentage of PI respondents was 7.0% among those who identified with more than 1 heritage, and 4.6% among those who identified most closely with PI heritage. Table 1 provides a summary of the data for gender, age, and race/ethnicity.

Household Profile

The majority of MC respondents reported having others living in their homes (90.0%) as opposed to living alone (with a mean of 2.9 other people living in the home). Less than one-third (30.7%) reported having at least 1 elder \geq 65 years living in the home (mean number of elders in the home = 1.4), and more

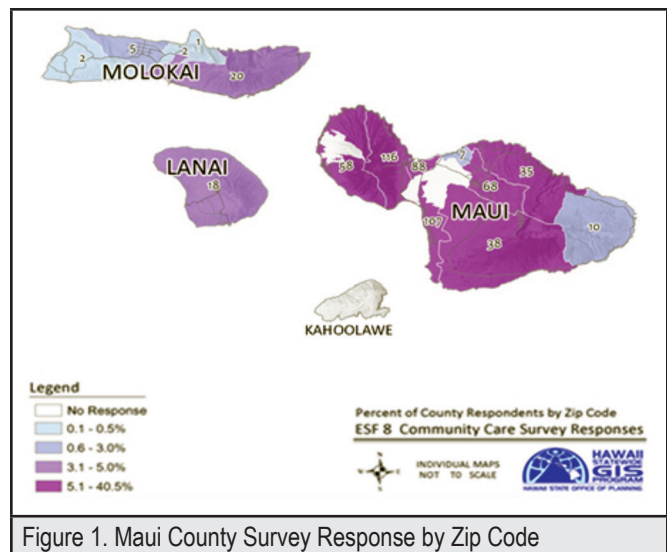


Figure 1. Maui County Survey Response by Zip Code

Table 1. Characteristics of Maui County Respondents (N=583) Compared to All Hawai'i Respondents (N=7927)

| | Maui County Respondents | | Statewide Respondents ^a |
|-------------------------|-------------------------|----------------|------------------------------------|
| | n ^b | % ^c | % |
| Gender | | | |
| Female | 418 | 72.2 | 69.3 |
| Male | 124 | 21.4 | 25.4 |
| Non-binary ^d | 37 | 6.4 | 5.3 |
| Age | | | |
| 18-24 | 77 | 13.3 | 14.8 |
| 25-34 | 67 | 11.6 | 16.6 |
| 35-44 | 133 | 23.1 | 20.1 |
| 45-54 | 109 | 18.9 | 17.6 |
| 55-64 | 120 | 20.8 | 16.8 |
| 65+ | 69 | 12.0 | 13.8 |
| Race/Ethnicity | | | |
| Caucasian | 259 | 45.6 | 34.8 |
| Native Hawaiian | 119 | 20.9 | 14.2 |
| Filipino | 66 | 11.6 | 11.6 |
| Japanese | 43 | 7.5 | 19.4 |
| Pacific Islander | 26 | 4.6 | 3.4 |
| Other | 19 | 3.3 | 3.4 |

^a All respondents in Hawai'i.⁴

^b Totals may not equal to 583 due to unanswered/missing data.

^c Percentages may not equal 100% due to unanswered/missing data.

^d Non-binary refers to the self-reported sexual identity of the survey respondent.

than one-third (42.5%) had 1 or more person younger than 18 years in their household (mean 1.7 children in the home).

Digital Connectivity

The majority of MC respondents reported having internet access in the home or at work, 1.8% reported no internet access at all. The majority (98.8%) also reported having access to a working cell phone.

Household Profile

Of those in MC who answered the annual family income question, 43.6% reported a family income of \$75,000 or less. The median annual household income in Hawai'i is \$78,074.²

More than 60% of MC respondents reported that they or family members experienced a negative impact on employment, which included reduced work hours (37.7%), or job loss (27.4%) because of COVID-19. Some, 27.1%, reported no change in work hours, and 7.8% reported an increase in work hours.

More than 70% (73.3%) reported that the family income decreased due to COVID-19, and about one-half (49.7%) reported the decrease as moderate or large. A greater percentage of respondents in MC either had work hours reduced or lost their jobs compared to statewide. Table 2 provides a summary of the MC respondents' reported household incomes and impacts on employment hours due to COVID-19 compared to statewide respondents³.

Chronic Disease Burden

More than one-half of MC respondents (55.9%) reported that at least 1 person in the household had at least 1 chronic disease. Asthma, diabetes, obesity, mental health conditions, and heart disease were the most prevalent diseases. Table 3 illustrates the chronic disease burden of MC respondents compared to that of statewide respondents.

Usual Source of Health Care

The majority of MC respondents (70.5%) reported that they went to a family doctor's office for health care. Others reported receiving care at community health centers (20%), and hospital-based clinics (7.4%). About 9 percent reported that they either used the emergency department as their usual source of health care or had no usual source of health care. A greater percentage of respondents in MC use a community health center for usual health care, compared to the statewide responses (Table 4).

Mental Health

The survey tool included the 4 questions from the PHQ-4 to assess mental health.⁵ About half of all MC respondents reported being bothered by feeling nervous, worried, having little pleasure, or feeling down at least several days over the past 2 weeks. About one-third (33%) reported feeling nervous

Table 2. Comparison of Estimated Income and Impact on Employment and Work Hours Among Maui County Respondents (N=583) Compared to All Hawai'i Respondents (N=7927) After COVID-19

| | Maui County Respondents | | Statewide Respondents ^a |
|-------------------------------------------|-------------------------|----------------|------------------------------------|
| | n ^b | % ^c | % |
| Income range | | | |
| Less than \$40,000 | 112 | 19.2 | 17.2 |
| \$41,000 - \$75,000 | 142 | 24.4 | 20.7 |
| \$76,000 - \$125,000 | 142 | 24.0 | 26.3 |
| \$126,000+ | 116 | 19.9 | 22.1 |
| Choose not to answer | 70 | 12.0 | 13.7 |
| Impact on employment or work hours | | | |
| No effect | 158 | 27.1 | 37.0 |
| Increased work hours | 45 | 7.8 | 11.2 |
| Reduced work hours | 219 | 37.7 | 32.2 |
| Lost job | 159 | 27.3 | 19.6 |
| Impact on income | | | |
| No | 155 | 26.6 | 39.9 |
| Yes, a little | 137 | 23.5 | 24.4 |
| Yes, a moderate amount | 136 | 23.4 | 18.1 |
| Yes, a large amount | 154 | 26.46 | 17.6 |

^a All respondents in Hawai'i.⁴

^b Totals may not equal to 583 due to unanswered/missing data.

^c Percentages may not equal 100% due to unanswered/missing data.

Table 3. Chronic Disease Burden Among Maui County Respondents (N=583) Compared to All Hawai'i Respondents (N=7927)

| | Maui County Respondents | | Statewide Respondents ^a |
|------------------------|-------------------------|------|------------------------------------|
| | n | % | % |
| Chronic disease | | | |
| Asthma | 153 | 27.6 | 25.5 |
| Diabetes | 115 | 20.4 | 19.0 |
| Obesity | 103 | 18.5 | 18.8 |
| Mental health illness | 80 | 14.4 | 15.0 |
| Heart disease | 71 | 12.8 | 12.5 |
| Cancer | 36 | 6.5 | 5.3 |
| Lung disease | 14 | 2.5 | 3.3 |
| Kidney disease | 18 | 3.3 | 3.8 |

^a All respondents in Hawai'i.⁴

more than half the time or nearly every day in the past 2 weeks, and one-fourth (25.0%) reported feeling worried more than half the time or nearly every day in the past 2 weeks. These percentages were consistent with those of the respondents in all counties across the state. A mental health score was computed

via assigning points for the level of each emotion; 25.1% of respondents from MC had moderate or severe negative mental health scores. Table 5 illustrates the range of these scores for MC respondents.

Housing Situation

Compared with statewide respondents, a smaller percent of respondents from MC who currently own or rent a home or condo expected to be living in the same place in 3 months; and a greater percent reported their expectation to be houseless in 3 months compared to now (Table 6). The reported housing risk among respondents from MC is consistent with responses from other counties across the state.

Daily Essentials

In almost every category of essential living expenses, the percentage of families from MC who expected to have problems paying in 3 months nearly doubled. These needs are consistent with responses to this question statewide (Table 7).

Challenges with School

More than half of MC respondents (n=271) expected to have someone in the household in school in fall 2020. Expected challenges included lack of funds to purchase school supplies (n=74; 13.0%), lack of face coverings (n=30; 5.4%); and language barriers (n=12; 2.2%).

Language Spoken Mostly in the Home and Translation Needs

The majority of respondents (n=521; 92.1%) reported that English is the language spoken most in the home. Translation needs that were not met were reported by 14 respondents, most were for health (n=9), social services (n=7), and educational services (n=7).

Use of Statewide Assistance Hotline Number (211)⁶

Only 5.3% (n=31) of respondents in MC reported that they ever called 211 for social service assistance. Of these, 45.2% (n=14) reported that they received the assistance that they requested, 32.3% (n=10) reported they did not receive the assistance that they requested, and 32.3% (n=10) reported that they were directed to an internet site.

Attempt at Applying for Benefits

Respondents were asked about success with any application for benefits in the areas of finance, food, and health services. The vast majority of MC respondents who did apply for benefits could successfully complete the application. For those who could not, the most common issues that were reported included not having all of the required documents, or not getting through on the telephone when calling. Table 8 illustrates the specifics with regards to such benefits application challenges.

Table 5. Mental Health Scores Among Maui County Respondents (N=583)

| | n ^a | % ^b |
|--------------------|----------------|----------------|
| PHQ-4 Score | | |
| Normal (0-2) | 259 | 44.6 |
| Mild (3-5) | 176 | 30.3 |
| Moderate (6-8) | 88 | 15.1 |
| Severe (9-12) | 58 | 10.0 |

^a Totals may not equal to 583 due to unanswered/missing data.

^b Percentages may not equal 100% due to unanswered/missing data.

Table 6. Housing Situation Today and Likely in 3 Months Among Maui County Respondents (N=583) Compared to All Hawai'i Respondents (N=7927)

| Housing arrangement | Maui County Respondents | | Statewide Respondents ^a | |
|------------------------------------------------------------------------|---------------------------------|------------------------------------------------|------------------------------------|------------------------------------------------|
| | TODAY where do you live? | Where are you most likely to live in 3 MONTHS? | TODAY where do you live? | Where are you most likely to live in 3 MONTHS? |
| | n ^b (%) ^c | n ^b (%) ^c | n (%) | n (%) |
| A home, condo, or apartment that you OWN. | 335 (59.0) | 280 (49.2) | 4588 (58.2) | 3803 (48.2) |
| A home, condo, or apartment that you RENT. | 217 (38.5) | 188 (33.8) | 3005 (38.1) | 2578 (32.8) |
| Houseless, live with others that you know, in their home or apartment. | 21 (3.8) | 26 (4.7) | 272 (3.5) | 317 (4.0) |
| Houseless, live in a public shelter. | 3 (0.5) | 5 (0.9) | 22 (0.3) | 32 (0.4) |
| Houseless, live in a tent, car, or outside. | 1 (0.2) | 6 (1.1) | 13 (0.2) | 70 (0.9) |

^a All respondents in Hawai'i. ^b Totals may not equal to 583 due to unanswered/missing data. ^c Percentages may not equal 100% due to unanswered/missing data.

Table 7. Current and Expected Future Difficulties With Having Enough Money To Pay for Essentials Among the Maui County Respondents (N=583) Compared to All Hawai'i Respondents (N=7927)

| | Maui County Respondents | | Statewide ^a | |
|--------------------------------------------------------|-------------------------|----------------------|------------------------|----------------------|
| | Today n (%) | In 3 months n (%) | Today n (%) | In 3 months n (%) |
| Essential | | | | |
| Food | 84 (15.0) | 170 (30.5) | 979 (12.5) | 1821 (23.1) |
| Rent or mortgage | 111(19.9) | 201 (36.1) | 1142 (14.5) | 2222 (28.2) |
| Auto expenses (e.g., gas, insurance, car payments) | 112 (19.9) | 187 (33.2) | 1099 (14.0) | 1942 (24.7) |
| Medicines | 57 (10.2) | 108 (19.4) | 657 (8.4) | 1206 (15.4) |
| Utility bills (e.g., electric, water, cable, internet) | 103 (18.3) | 175 (31.2) | 1090 (13.9) | 1839 (23.4) |
| Cell phone, internet, cable bill | 106 (18.8) | 165 (29.4) | 1055 (13.4) | 1741 (22.1) |
| Childcare/ elder care | 44 (8.0) | 62 (11.2) | 416 (5.3) | 720 (9.2) |
| Health care | 88 (15.5) | 138 (24.8) | 816 (10.4) | 1437 (18.3) |
| Public transportation | 22 (4.0) | 41 (7.4) | 312 (4.0) | 536 (6.8) |
| Other debts | 112 (20.1) | 165 (29.5) | 1244 (15.8) | 1966 (25.0) |

^a All respondents in Hawai'i.⁴

Table 8. Summary of Outcomes When Applying for Assistance Among Maui County Respondents (N=583)

| Type of Assistance ^a | If YES, applied for assistance, were you able to complete the application? | | If you could not complete the application: Reason(s) [Check all that apply] ^b | | | | |
|------------------------------------------------|----------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------|-----------------------------------------|--------------------------------------------------|
| | Yes | No | No internet access | Could not figure out how to navigate the form | Did not have all the documents | Did not understand questions in English | Tried to call on phone but could not get through |
| | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) |
| Prequalification for financial hardship relief | 57 (93.4) | 4 (6.6) | 0 (0) | 3 (75) | 4 (100) | 1 (25) | 3 (75) |
| Rental assistance | 24 (88.9) | 3 (11.1) | 0 (0) | 1 (33.3) | 4 ^b (100) | 1 (33.3) | 2 (66.7) |
| Food | 63 (87.5) | 9 (12.5) | 0 (0) | 1 (11.1) | 5 (55.6) | 2 (22.2) | 2 (22.2) |
| Health insurance | 78 (97.5) | 2 (2.5) | 0 (0) | 2 (100) | 2 (100) | 0 (0) | 2 (100) |
| Healthcare benefits (e.g., Quest or WIC) | 65 (94.2) | 4 (5.8) | 0 (0) | 4 (100) | 3 (75) | 2 (50) | 5 ^b (100) |

Abbreviation: WIC, Special Supplemental Nutrition Program for Women, Infants, and Children.

^a Type of assistance applied for in Hawai'i between August 12, 2020, and September 5, 2020.

^b Some participants reported being able to complete the application but later reported barriers that prevent them from completing the application.

Personal Beliefs and Activities Regarding COVID-19 Prevention

The majority of respondents in MC (79.9%) consider COVID-19 to be highly or very highly serious. There is a moderate level of knowledge among MC respondents regarding which groups are at higher risk for contracting severe COVID-19: 61.5% know it is the elderly and those with chronic diseases; 72.2% report the ability to recognize if a family member with COVID-19 needs to go to the hospital; more than two-thirds (67.4%) know where to go for COVID-19 testing; however, only 40.0% would know how to provide care for someone in their family with COVID-19. The pattern of knowledge about COVID-19 is consistent with responses across all of the other counties in the state.

Only 55.6% of MC respondents reported that they practice social distancing usually or all of the time, and 71.5% said they wear a face covering usually or all of the time, while 91.4% reported that their family members wash their hands the same or more often since the start of COVID-19. About three-fourths (73.3%) report that they have a working thermometer at home, and about one-quarter (26.7%) reported not having a thermometer in the home.

Resource barriers for caring for a family member with COVID-19 were identified for MC respondents: 56.5% said there is a lack of space in their homes for isolation; 30.1% reported they would not have enough cleaning supplies, and only slightly more than half (53.1%) reported that if they got COVID-19 there would be a family member available to care for them. Table 9 provides a

summary of the factors that influence COVID-19 prevention, preparedness, and response.

Overall household preparedness for COVID-19 scores for respondents were computed based on their answers to questions about COVID-19 attitudes, knowledge, behaviors, and resources on hand. In MC there is a high level of perceived severity regarding the seriousness of COVID-19, there is a moderate level of knowledge about the disease and how to care for a family member so afflicted, and a moderate level of compliance with COVID-19 prevention measures (Table 10).

Best Source of Accurate Information

While many sources of information were reported to be used, the majority of MC respondents used the Centers for Disease

Control and Prevention (CDC) website (49.9%), followed by the Hawai'i State Department of Health website (20.4%), TV news (10.3%), community-based leaders, organizations or churches (6.6%), and other sources (13%). This pattern for sources of information is consistent with that of respondents in other counties in the state.

Burden of Challenges by Specific Groups

Table 11 provides a snapshot of the challenges that respondents from MC encountered. In general, PI and NH respondents experienced more challenges compared to other groups in MC for COVID-19 preparedness, response, and impact. Filipinos reported having a higher rate of no internet access.

| Table 9. Factors for COVID-19 Preparedness and Response Among Maui County Respondents (N=583) | | |
|-----------------------------------------------------------------------------------------------------------|----------------|------|
| | n ^a | % |
| Attitude Question | | |
| Perceived Severity of COVID-19 | | |
| Not serious | 17 | 2.9 |
| Low level | 25 | 4.3 |
| Moderate level | 75 | 12.9 |
| High level | 166 | 28.5 |
| Very high level | 299 | 51.4 |
| Knowledge Questions | | |
| Know vulnerable populations (elderly and chronic disease) | 359 | 61.6 |
| Know where to go for COVID-19 testing | 390 | 67.6 |
| Know how to provide medical care for someone at home with COVID-19 | 232 | 40.0 |
| Able to recognize when a family member with COVID-19 would need to go to the hospital | 423 | 72.7 |
| Behaviors Questions | | |
| Usually or Always practice social distancing by staying at least 6 feet away from others when not at home | 323 | 55.7 |
| Usually or Always wear a face-covering when outside of your home | 410 | 70.6 |
| Family members wash hands the same frequency or More frequently since COVID-19 | 532 | 91.4 |
| Have a thermometer that works at home | 426 | 73.3 |
| Resources Questions | | |
| Problems would face if someone in household has COVID-19 | | |
| Lack of space for isolation | 323 | 56.6 |
| NO face mask | 16 | 2.9 |
| NO hand sanitizer | 34 | 6.1 |
| Not enough cleaning supplies | 169 | 30.1 |
| Have someone be available to care for you if you got COVID-19 | 308 | 53.1 |

^a Totals may not equal to 583 due to unanswered/missing data.

| Table 10. Overall Household Preparedness for COVID-19 Among Maui County Respondents (N=583) | | |
|---------------------------------------------------------------------------------------------|----------------|----------------|
| | n ^a | % ^b |
| Attitude - Perceived Severity of COVID-19 (total 1 question) | | |
| Low (none-low) | 42 | 7.2 |
| Moderate (mod) | 75 | 12.9 |
| High level (high-very high) | 465 | 79.9 |
| Knowledge (total 4 questions) | | |
| Low level of knowledge (0-2) | 301 | 51.7 |
| Moderate level of knowledge (3) | 162 | 27.8 |
| High level of knowledge (4) | 120 | 20.6 |
| Behaviors – compliance with measures (total 4 questions) | | |
| Low level of compliance (0-1) | 49 | 8.4 |
| Moderate level of compliance (2-3) | 330 | 56.7 |
| High level of compliance (4) | 203 | 34.9 |
| Resources Needed (total 6 questions) | | |
| None (0) | 134 | 23.0 |
| Low level of needs (1) | 183 | 31.4 |
| Moderate level of needs (2-3) | 218 | 37.4 |
| High level of needs (4-6) | 48 | 8.2 |

^a Totals may not equal to 583 due to unanswered/missing data.

^b Percentages may not equal 100% due to unanswered/missing data.

| Table 11. Challenges for Special Groups Among Maui County Respondents (N=583) | | | | | | |
|-------------------------------------------------------------------------------|------------|-----------|-----------|-----------------|------------------|-----------|
| | Caucasian | Filipino | Asian | Native Hawaiian | Pacific Islander | Other |
| | n (%) | n (%) | n (%) | n (%) | n (%) | n (%) |
| Connectivity | | | | | | |
| NO access to internet | 2 (0.8) | 2 (3.3) | 1 (1.7) | 3 (2.8) | 2 (9.6) | 0 (0) |
| NO working cell phone | 4 (1.6) | 0 (0) | 0 (0) | 2 (1.7) | 1 (3.9) | 0 (0) |
| Household chronic disease | | | | | | |
| Household has 1 or more people living with chronic disease | 137 (52.9) | 36 (54.6) | 38 (58.5) | 73 (61.3) | 21 (80.8) | 17 (47.2) |
| Challenges going back to school | | | | | | |
| Language barrier | 1 (0.4) | 1 (1.7) | 0 (0) | 5 (4.6) | 4 (18.2) | 1 (2.8) |
| Lack of face covering | 6 (2.3) | 6 (10.2) | 4 (6.6) | 8 (7.4) | 6 (27.3) | 0 (0) |
| Lack of funds to buy school supplies | 20 (7.8) | 11 (18.7) | 5 (8.2) | 24 (21.8) | 7 (31.9) | 6 (16.7) |
| Other – computer, internet | 51 (19.7) | 22 (36.2) | 16 (25.9) | 34 (31.5) | 10 (43.5) | 8 (22.2) |
| Emotional Stress Level | | | | | | |
| Normal | 106 (41.1) | 28 (42.4) | 31 (47.7) | 61 (51.7) | 15 (57.7) | 13 (36.1) |
| Mild | 81 (31.4) | 26 (39.4) | 16 (24.6) | 34 (28.8) | 5 (19.2) | 10 (27.8) |
| Moderate | 38 (14.7) | 8 (12.1) | 11 (16.9) | 15 (12.7) | 6 (23.1) | 10 (27.8) |
| Severe | 33 (12.8) | 4 (6.1) | 7 (10.8) | 8 (6.8) | 0 (0) | 3 (8.3) |

Discussion

Demographics

Overall, the survey response rate for MC participants aligned with the county demographics. Gender was the only category that had a disproportionate response rate from female MC participants, as the US Census reports that the gender breakdown in Hawai'i is equal among male and females.² A similar disproportion of female respondents participated in all counties. While there is no clear explanation for this, it is more common for women to assume responsibility for health matters in the family and this may account for more female respondents compared to men.

Household Profile

Compared to the statewide participants, MC respondents had slightly lower household incomes, more households where the income decreased, and a higher percentage of households with reduced work hours or lost jobs due to COVID-19. Unemployment in MC increased 19.6% in the third quarter of 2020, as compared to the same time period in 2019.⁷ Furthermore, due to restrictions on incoming travelers, the MC economy may have experienced a more severe financial impact because of COVID-19. Many hotels and travel industry businesses suffered greatly as MC visitor arrivals by air dropped by 99.0% in the third quarter of 2020 compared to 2019.⁷

The vast majority of the MC participants have internet access and a working cell phone. However, participants who reported no internet or no working cell phone identified as NH or PI. This further demonstrates that technological inequities exist and vulnerable populations are more susceptible to the digital divide.

Housing

The percentage of participants who reported living in a home or condominium that they own or rent now in MC, was 15% higher than the percentage who expected to be in the same housing situation in 3 months. The state order under Section 261 of the Public Health Service Act to halt any evictions is likely to impact the housing situation in MC.⁸

In every category surveyed regarding whether respondents had difficulty paying for essentials now, the percentage of participants responding affirmatively regarding the likelihood of problems in 3 months increased. These problems will be further exasperated by reduced travel industry activities and business restrictions due to the pandemic. In addition, many specialty resources and facilities are only available on the island of O'ahu, hence MC participants encounter additional costs due to shipping and interisland travel.

Chronic Disease Burden

As more than half of MC participants reported having some burden of chronic disease in the household, a general concern is the ability to obtain timely health care. In particular, residents of islands other than O'ahu frequently need financial and logistical support when they require a higher level of care and need to travel to O'ahu for such care. Due to COVID-19, additional possible access barriers for MC residents may include changes in work schedules, lack of health insurance due to reduced work hours, no primary care physician, work and care-giving obligations, government restrictions on movement, and reductions in transportation options. These factors will further challenge the health and well-being of the MC community during the protracted COVID-19 pandemic.

Personal Beliefs and Activities Regarding COVID-19 Prevention

Overall, there is a good level of knowledge among MC respondents about the severity of COVID-19 and which groups are most at risk. However, it is concerning that less than half of the MC participants reported knowing how to provide care for a family member if they get sick with COVID-19. This is further exasperated by the lack of space for social isolation within homes, and lack of adequate cleaning supplies. Additionally, only a little more than half of the MC respondents reported that they practice social distancing all of the time, and about one-third do not wear face covering when outside the home. These actions may be due to a sense of complacency perpetuated by the extensive travel and business restrictions and low daily average of COVID-19 cases in the County. However, the COVID-19 has shown to be unpredictable in its spread and mutations of the virus itself and as such exacerbates the risk.

Education on prevention and care for those that have become ill is important in keeping the MC population safe. To help facilitate more local access to culturally appropriate information, public messaging that is targeted toward different groups must be crafted and delivered via diverse methods and specifically for those with less understanding. Individuals need instructions and the required tools to care for those who become ill and reduce the spread of COVID 19.

Limitations

A convenience-sampling frame was used; all responders were self-selected and there is no way to determine an actual response rate. Therefore, the report results must be viewed within the context of potential self-selection bias. In addition, while the survey was available in both paper form and online, the vast majority of respondents participated online. Thus, there is a

chance that those with no access to the internet and hidden groups, such as the houseless, may not be adequately represented in the sample. In addition, all data were self-reported and not verified. However, there are consistent trends in responses across respondents from all of Hawai'i counties, which lend credence to the findings. To mitigate some of these concerns, the community partners reviewed and corroborated the results.

Conclusions

The MC results revealed several areas of need that are consistent with statewide findings. The geography of this county, suffering economy, and health care access challenges puts this population in a unique situation. The MC population has been somewhat protected from COVID-19 by the travel restrictions and isolation, however, it remains vulnerable due to limited access to care and COVID-19 fatigue. Results also show that vulnerable populations are further challenged by the pandemic, particularly the NH and PI residents in MC.

Conflict of Interest

None of the authors identify a conflict of interest.

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