

# **Fair Housing Access, Affordability, and Quality *for* Michigan Farmworkers**

**During the COVID-19 Pandemic and Beyond**

PHOTO BY MFP FARMWORKER PARTICIPANT

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# Executive Summary

**FARMWORKERS** are the backbone of Michigan’s agricultural industry, which contributes \$104.7 billion annually to the state economy,<sup>1</sup> despite agricultural work being one of the lowest-paid and most hazardous occupations.<sup>2</sup> We present the quantitative findings from a mixed-methods study conducted in Michigan in 2020–2021 examining the housing situation of migrant, seasonal and H-2A farmworkers in Michigan and provide a general description of housing access, affordability and quality for these farmworkers living both in and outside of agricultural worker housing sites.

This report presents the findings from interviews with farmworkers (n= 63) conducted during the COVID-19 pandemic in Michigan. Our results emphasize the vulnerability of farmworkers and the challenges they face with housing affordability, access, and conditions, exacerbated during the COVID-19 pandemic.

Overall, our study found that for farmworkers in Michigan, housing access, affordability and quality are important and complicated issues that need to be assessed within the context of their employment and working conditions. Precarious employment and the economic marginalization of farmworkers affects their housing affordability, access and housing quality. In the present study, farmworkers reported very low annual incomes. More than a third of farmworkers were classified as living in poverty. Notably, this is more than three times the official poverty rate in the general United States (US) population in 2020 at 11.4% and US-born Michiganders at 13%.<sup>3,4</sup> Food insecurity emerged as an important issue for farmworkers. Over a quarter of farmworkers were classified as having low or very low food security (27%)—more than double the level of food insecurity in US households (10.5%) in 2020 and almost seven times greater than the 3.9% of US households facing very low food security.<sup>4–6</sup>

Further, the majority of migrant and seasonal workers reported not receiving food stamps (64%, 33/52) and of those with children under age 18 living with them, more than half (57%) reported not receiving food stamps (21/37). Food security is an important social determinant of health and good nutrition is foundational for overall health and well-being of farmworkers and their families. Food assistance programs for farmworkers and their families may be an important approach to address food security issues in this population, along with the recommendations from the Michigan Food Security Council.<sup>6</sup>

Farmworkers in our study reported facing many challenges when it comes to housing access and affordability, which are important factors for health as spending a larger amount of income on housing may affect the ability to access nutritious food, health care, and other health-promoting resources. About a quarter of migrant and seasonal farmworkers reported being denied housing when trying to find rental places in Michigan. Most of these participants stated that housing options in Michigan were expensive and that their salary was insufficient to cover rent and services. About half of participants reported living in agricultural worker housing sites with the majority of those workers stating that it was because they did not have other housing options. Farmworkers expressed that their housing priorities were affordable, quality housing (clean, safe, habitable conditions) for them and their families, with access to services and transportation. More than half of participants stated that they would like to receive some support from local and state organizations to find housing in Michigan. Yet only 7 participants (13%, 7/52) had the experience of contacting an organization in Michigan for help with a situation related to housing.

Overall, physical housing conditions and characteristics were considered by farmworkers as functional and adequate. However, some aspects of housing quality are important to note from a public health perspective. A little more than a third of participants reported not having air conditioning in their home and about a third reported having door screens with rips or tears. These are important housing

characteristics that can potentially be a health concern for farmworkers given their inability to cool down in their houses after working long hours in hot conditions, increasing the risk of heat-related symptoms and illness. Window and door screens are an important preventive measure not only to cool a home, but also to keep insects out and avoid transmission of insect-borne diseases. Another important area of concern for participants related to housing conditions was exposure to residential environmental hazards (pesticide drift and odor, landfill, noise, factories, fumes from cars and trucks, standing water, garbage, and sewage), as well as water safety and quality.

The type of housing offered to workers and the ability to pay for fair and safe housing are aspects of housing access and quality impacted by the work arrangements, work schedules, and wages offered to farmworkers. Farmworkers in the study worked in a variety of agricultural tasks related to field crops, packing plants, nurseries or green houses. Workers reported long work schedules with the ability to take some breaks. Exposure to chemicals and pesticides at work was a concern noted by over half of participants. Almost a third of participants noted that they are never or rarely offered personal protective equipment by their employers. The dynamics of the working environment was a salient issue for farmworkers. Participants noted the stressful nature of their work and experiences with mistreatment, verbal abuse, and threats by their supervisors<sup>a</sup> (e.g., threats of being deported, losing their job). Many farmworkers perceived dehumanizing treatment at work, consistent with our previous study.<sup>7,8</sup>

The COVID-19 pandemic exacerbated the already challenging and difficult housing and work conditions for farmworkers. Workers who reported having tested positive for COVID-19 and who had to quarantine noted that their economic situation worsened due to not receiving economic compensation from their employer— an important contributor to housing insecurity.

For workers with children, childcare and the difficulty in parenting due to challenging and long work schedules was a concern. Lack of childcare was an important issue particularly

for single mothers and especially during the height of the pandemic. Moreover, lack of adequate space for children to play in and around the home, particularly for those living in agricultural worker housing sites, was a concern noted by participants. Farmworkers expressed wanting to have time for educational or technical opportunities and expressed concerns about not being able to have better social and educational opportunities for their children. Quality education is a powerful structural factor to break intergenerational cycles of poverty, but for the children of farmworkers, access to quality education is often not easy to attain given the working and social conditions of their families. Investing in the educational and social development of children of farmworkers is not only a fundamental human right, but also an important pathway to foster successful and productive adults to avoid generational cycles of disadvantage among farmworkers and their families.

Finally, from the participants’ perspective regarding their living and working conditions, farmworkers expressed the need for a dignified and safe working environment independent of legal status, access to affordable and quality housing, more employment opportunities, and an anonymous, accessible, easy to navigate and transparent neutral third-party system to present work- and housing-related complaints.

In sum, fair housing access, affordability, and quality need to be assessed and understood in conjunction with today’s labor opportunities and working conditions for farmworkers within the broader socioeconomic context that characterizes farmworkers, their families, and their communities.

<sup>a</sup> Supervisors in this report denotes crew leaders, contractors, and growers



PHOTO BY MFP FARMWORKER PARTICIPANT

## *Introduction*

The United States (US) Department of Agriculture reports that agricultural work produced \$1.1 trillion dollars, approximately 5% of the US gross domestic product,<sup>5</sup> a share that would not be possible without the 2.5–3 million farmworkers currently working in the country. Despite farmworkers' economic contributions, they work in one of the lowest-paid and hazardous occupations in the country.<sup>2</sup> The agricultural industry in the State of Michigan is estimated to contribute \$104.7 billion annually to the state's economy.<sup>1</sup> Michigan has approximately 94,167 farmworkers and non-working family members and dependents, with more than 42,000 children and youth ages 0–19, as reported in the most recent Migrant and Seasonal Farmworker Enumeration Profiles Study.<sup>9</sup> Additionally, according to the Office of Foreign Labor Certification-H-2A Temporary Agricultural Program, Michigan is among the top 10 states of H-2A temporary worker positions with 11,376 certified positions in the fiscal year 2021.<sup>10</sup>

Farmworkers are largely (83%) Latin American immigrants and approximately half are undocumented.<sup>11,12</sup> These workers face a cluster of vulnerability factors (e.g., poverty, uninsured, low education, discrimination, language barriers, and limited access to fair and safe housing) that are amplified by the historical exclusion from social and labor protections and most recently by the COVID-19 pandemic.<sup>13,14</sup>

Latinos, including those in farmworker communities, have accounted for a disproportionate share of COVID-19 cases in the US and have five to seven times higher mortality than Whites.<sup>15</sup> The impact of the COVID-19 pandemic in marginalized populations like Latinos, non-citizens, and farmworkers have resulted in a disproportionate economic burden, unemployment, job and food insecurity, and housing instability.<sup>16–19</sup>

In this report, we present the quantitative findings of a mixed-methods study conducted in 2020–2021 that examined the housing situation for farmworkers in Michigan within the context of their working environment and the COVID-19 pandemic.

## Farmworker Housing

Based on the available science and our own research, agricultural work is often precarious and characterized by insufficient wages, job insecurity, irregular working hours, unfair/abusive treatment, and hazardous working conditions. For farmworkers, these occupational conditions are closely interrelated to housing quality and stability given that their ability to access and afford their housing depends on unstable, temporary, low-paying jobs, and a reliance on employers to provide housing.<sup>20–25</sup> In our first study of the Michigan Farmworker Project (MFP), we found that workers who were reliant on employer-provided housing (i.e., resided in agricultural worker housing sites) were more likely to be on call, work under adverse weather conditions, not have rest days, and live in substandard conditions.<sup>8,26</sup>

Research examining farmworker housing suggests that housing is often expensive and financially burdensome as a result of low wages, is often of poor quality, and has limited availability or is inaccessible due to housing discrimination.<sup>20,25,27,28</sup> Limited availability of housing may contribute to housing and economic insecurity for farmworkers in Michigan. In 2010, a Michigan Civil Rights Commission Report described farmworker housing in the state as substandard, unhygienic, hazardous, structurally unsound, and lacking safe water—with no significant improvement in housing conditions for nearly 50 years.<sup>29</sup> Following this report, ongoing progress reports updated every few years suggest limited improvements in the working and living conditions of farmworkers in Michigan.<sup>30,31</sup> Additionally, according to the 2019 Recommendations progress report, aggressive zoning restrictions are limiting or eliminating the construction of housing occupied by farmworkers. These restrictions have included limitations on where farmworkers can be housed, discriminatory citizenship/immigration requirements, and development of single-gender housing, thus potentially limiting options for workers with families.<sup>31</sup>

Under the Workforce Innovation and Opportunity Act (WIOA), the Governor of each state must submit a Unified or Combined State Plan to the Secretary of the US Department of Labor that outlines a four-year strategy for the state's workforce development system. Mich-

igan's Governor Gretchen Whitmer proclaimed July 2021 as *Michigan Migrant and Seasonal Farmworker Appreciation Month* as part of the state WIOA program (2020–2023) recognizing the needs of health, education, safety and security concerns; as well as housing, English language proficiency, and employment training as unique needs of farmworkers in Michigan.<sup>32</sup> It also recognized a growing concern across the state regarding affordable housing, or the lack thereof, particularly in rural areas making it more difficult for growers and migrant families to afford the increased cost of housing, therefore creating a barrier for migrant families to migrate to work in Michigan.<sup>32</sup>

An important source of housing for farmworkers are the agricultural worker housing sites. Commonly, H-2A and migrant farmworkers are housed in agricultural worker housing sites as it is stipulated by law that the employer must provide housing at no cost to H-2A workers and to those workers in corresponding employment who cannot return to their residence within the same day.<sup>33</sup> The Michigan Department of Agriculture and Rural Development Migrant Labor Housing Program (MLHP) is designed to ensure the safety of agricultural worker housing sites occupied by five or more agricultural workers.<sup>34</sup> Licensure of an agricultural worker housing site indicates that the location has been inspected for safe water supplies, fire and structural safety, proper sanitation facilities, proper food preparation, storage facilities, and waste treatment and disposal.<sup>35</sup> According to their 2021 Annual Report, MLHP licensed 881 agricultural worker housing sites with 3,937 units and an overall capacity of 29,002 people.<sup>35</sup> Currently, the MLHP works with one manager, one bilingual office assistant and 7 inspectors who perform pre-licensing, in-season, and post-season inspections of all agricultural worker housing sites statewide with 5 or more farmworkers.<sup>31</sup>

Though employer-provided farmworker housing is seemingly subject to federal regulations under the Migrant and Seasonal Agricultural Worker Protection Act of 1983,<sup>36</sup> in practice, enforcement varies by state.<sup>37</sup> Many states, including Michigan, have instituted their own housing regulations, in addition to those set by the US Department of Labor, which increases between-state heterogeneity of protections. Michigan agricultural worker housing sites,

for instance, are required to have 1 shower for every 10 people, 1 toilet and handwashing sink per 15, and 1 laundry tub per 30.<sup>38</sup> While these are in compliance with the requirements established by the US Department of Labor, Occupational Safety and Health Administration<sup>38</sup> and have been adopted by the Michigan Occupational Safety and Health Administration,<sup>39</sup> it is recognized that these standards may be insufficient to ensure that farmworkers have access to healthy living conditions.<sup>21,31,40</sup> The first study of the Michigan Farmworker Project (MFP) identified farmworkers concerns regarding poor living conditions such as overcrowding, poor sanitation, and insufficient access to bathroom and laundry facilities.<sup>8,26</sup>

## Farmworker Housing and Implications for Health

Housing affordability, poor living conditions, and housing insecurity (e.g. frequent moves, cost burden, and eviction) have been widely documented as determinants of mental and physical health.<sup>41–44</sup> Studies report that between 20% to 52% of farmworkers experience depression and about 16% to 42% experience anxiety,<sup>45–52</sup> compared to a 7% who experience depression and 19% who experience anxiety among the general US population.<sup>53,54</sup> Additionally, chronic illnesses such as asthma, type II diabetes, hypertension, and heart disease are highly prevalent in farmworkers<sup>55–61</sup> and are known to further affect physical and mental health.<sup>62–65</sup> The burden of these health conditions in farmworkers has been particularly concerning during the COVID-19 pandemic as they may exacerbate health inequities in farmworkers.

Poor housing conditions may also reduce the ability of farmworkers and their families to engage in health-promoting behaviors<sup>14</sup> such as pesticide safety practices (e.g., washing clothes after working in the fields), physical activity, and rest.<sup>66</sup> Research with farmworker populations indicates that overcrowded, poorly ventilated, and unhygienic living conditions are associated with respiratory<sup>67</sup> and dermatological conditions,<sup>68,69</sup> increased stress,<sup>66,70,71</sup> poor sleep quality,<sup>72,73</sup> depressive symptoms,<sup>74–76</sup> and anxiety.<sup>46,52,74</sup>

Housing instability also has implications for food access. Food insecurity is caused

by the lack of resources required to consistently access enough food for every person in a household. The cycle of poverty, food insecurity and poor health outcomes is linked to precarious work and access to fair housing.<sup>4,6</sup> The state of Michigan falls above the 75th percentile for annual statewide healthcare costs associated with food insecurity, or \$1,801,282,000 per year.<sup>4</sup> Before the COVID-19 pandemic, approximately 1.3 million Michiganders faced food insecurity, and now, it is estimated that approximately 1.9 million individuals are food insecure in Michigan, 552,400 of which represent children.<sup>77</sup>

## The Michigan Department of Civil Rights & the Michigan Farmworker Project: Housing and COVID-19

In 2020, as part of the mission of the Michigan Department of Civil Rights (MDCR) to improve farmworker housing in the state, Marcelina Trevino and colleagues at MDCR obtained a grant funded by the Department of Housing and Urban Development Fair Housing Assistance Program (FHAP) CARES Act to assess the issue of fair housing among farmworkers in the state, in the context of the COVID-19 pandemic. As part of this grant, the MDCR commissioned investigators Drs. Alexis J Handal and Lisbeth Iglesias-Rios from the University of Michigan to conduct a survey with farmworkers to better understand their housing situation and the complex interplay between housing, employment and health in this population of workers. This study builds on the initial work and community partner collaborations of the Michigan Farmworker Project (MFP), a university-community based project developed in 2019.<sup>7,78</sup>

The objective of the present study was to assess potential multi-level barriers to fair housing access (e.g., employment conditions, fear of deportation, lack of childcare access, families with children, job insecurity) and employment for farmworkers in the State of Michigan. The study took place amidst the COVID-19 pandemic (2020–2021) which has highlighted the social vulnerability faced by farmworkers, who are considered *essential workers*, as well as the critical role housing plays in farmworker health.

# Methods

We conducted a mixed-methods cross-sectional study with migrant, seasonal, and H-2A farmworkers in the State of Michigan. Data were collected through a collaboration between the Migrant Resource Councils (MRCs) in Oceana, Kent, and Van Buren and their migrant outreach workers in addition to the research team from the University of Michigan (UM) School of Public Health. Recruitment sites were selected based on previous collaborations with these MRCs and the selection of counties was determined based on regions known for their high agricultural activity. Migrant outreach workers provided referrals, while the UM research team recruited, consented, and conducted all research activities. In collaboration with community partners, the UM research team designed the survey and data collection protocols and provided referrals to participants in need of additional services (i.e., social, health or legal). The UM research team provided training and supervision to research assistants and conducted all data management and analysis activities.

The first phase of the study consisted of collecting qualitative data through 20 in-depth interviews conducted by phone between August of 2020 and January 2021. These data informed the development of the quantitative survey that was administered to 63 farmworkers between May 2021 and August 2021 via phone interviews (phase 2). This report focuses on the quantitative findings of the 63 migrant, seasonal and H-2A farmworkers who participated in the phase 2 study.

Individuals were eligible to participate if they were aged 18 years or older, spoke Spanish or English, and worked in agriculture in Michigan. Initially we only enrolled agricultural workers who were actively working at the time of recruitment, but we opened enrollment to anyone who had worked in agriculture since

January 2020 for various reasons: (1) workers have irregular employment that often varies based on the type of crop, thus they may be employed for some time but then might be unemployed for weeks or months until the next crop starts; (2) some farmworkers were laid off due to the pandemic or were getting sick with COVID-19; and (3) the focus of the study was to examine, broadly, the housing situation of the workers during the pandemic. Supervisors—defined in this study as crew leaders, contractors and growers—were not included in the study.

All phone surveys were conducted by bilingual (English and Spanish) interviewers trained in interview research methods by study leads. Surveys were administered in the participant's preferred language with 61 preferring Spanish and only two requesting surveys in English. Interviews lasted approximately 1.5 hours with a maximum of 2 hours. While most surveys were completed in one session, exceptions were made for participants needing to complete the survey over several sessions in the same week. Exceptions were made mainly due to workers being sick with COVID-19 who were unable to complete the entire interview due to health issues (e.g., difficulty breathing, feeling tired), those who needed more time to attend to their children (for female farmworkers in particular), and due to unexpected work commitments. Interviewers conducted most of the interviews on weekends and in the evenings to provide schedule flexibility for the workers.

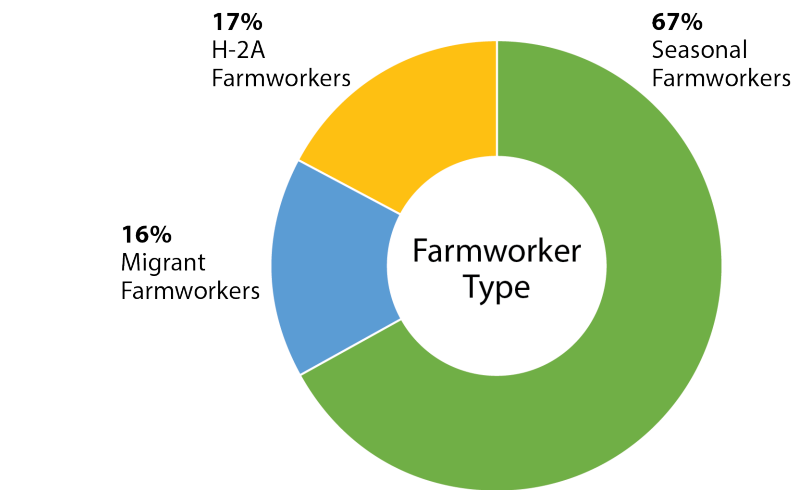
Survey topics covered housing type and ownership, housing access, physical characteristics of housing, household characteristics (e.g., number of people living in same space, household composition), social characteristics of the housing environment (e.g., facilities shared or individual; isolation; access to communication; crowding; noise; and privacy), access to services (e.g., reliable access to running water, toilet and shower, handwashing, laundry, electricity, adequate garbage disposal, and kitchen facilities), quality of housing (e.g., function and condition of facilities; water, security and stability; hygiene and sanitation; fire and emergency safety), and farmworkers' perceptions of their housing.

The survey instrument also collected information on the participants' socio-demographic characteristics, psychosocial factors, employment, type of agricultural work, COVID-19 risk factors, safety practices at home and in the workplace, COVID-19 testing and symptoms, other medical conditions, and economic and social stressors experienced during the pandemic. To assess food insecurity, we employed the validated 6-item US Department of Agriculture (USDA) Household Food Security Scale<sup>79</sup> which explores domains such as access to food and hunger over the past 12 months. It has a sensitivity of 92% and a specificity of 99.4%. The sum of affirmative responses to the six questions according to score guidelines were defined as follows: high food security, marginal food security, low food security, and very low food security.

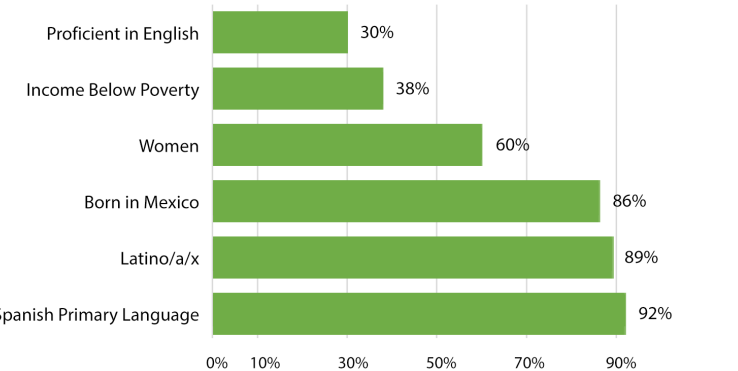
The survey instrument was pilot-tested, reviewed, and finalized by the UM research team, along with several MFP community partners and Marcelina Trevino of MDCR. Participants were given a \$35 gift card for their participation in the study. All research activities were approved by the University of Michigan IRB Health Sciences and Behavioral Sciences (HUM00165344).

Descriptive statistics were calculated to assess demographic, housing, working, and health data using frequencies and means to assess distributions, outliers, and missing data. For validity and data quality assurance, we used a double-data entry process where all data points were verified and reconciled, identifying errors and discrepancies in the data by two individuals. The differences in the denominators presented throughout the results section of this report represent missing data and non-applicable responses as some questions were not applicable to all types of farmworkers. All data analyses were performed using SAS 9.2 (SAS Institute, Cary, NC).

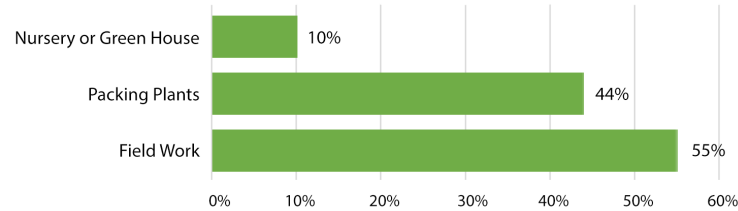
# Results



Sociodemographic Characteristics



Worker Agricultural Activities



## Demographic Characteristics

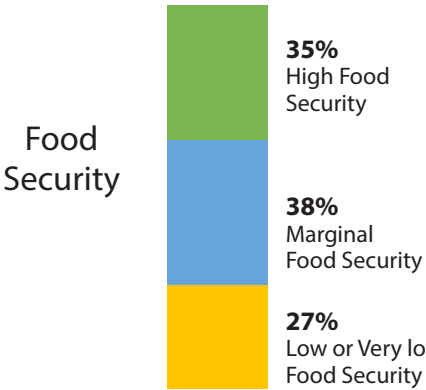
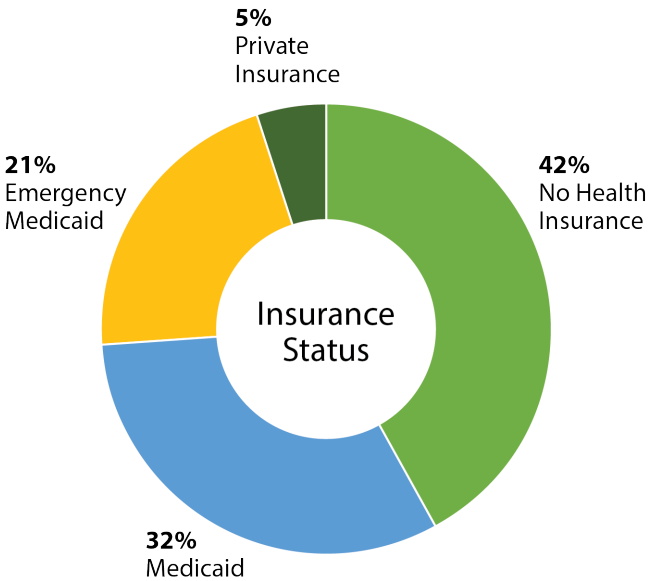
We enrolled 63 farmworkers total, two-thirds (67%) were seasonal workers who either work the entire year in different crops or agricultural activities or workers who only work for specific seasons of crops. The sample also included 10 migrant workers (16%) and 11 (17%) H-2A farmworkers who come to work in Michigan with non-immigrant temporary work visas. More than half of the sample were female (n=38, 60%) and a quarter were male (n=25, 40%). The mean age of participants was 39 years old, with the youngest participant being 21 and the oldest 62 years old. Most farmworkers were born in Mexico (86%, 54/63), with eight in the United States (13%) and one in Guatemala (2%). Most of the participants self-described their race/ethnicity as Latino or Hispanic (89%, 56/63), while four (6%, 4/63) identified as White, and three (5%, 3/63) identified as Indigenous from Latin America.

Most of the participants spoke Spanish as their main language at home (92%, 58/63) and only 19 of the 63 participants reported being competent or fluent in English (30%). On average, participants completed 9 years of education (with a range from 2 years to 17 years). The majority were married, in a civil union or in a relationship (67%, 42/63) and had children (87%, 55/63). Of those with children, 87% had children of any age living with them (48/55) and 78% had children under 18 years of age living with them (43/55).

Given the dynamic nature of agricultural work, we asked about the type of agricultural work that they were doing at the moment of the interview. Farmworkers reported working in the field (55%, 34/62), packing plants (44%, 27/62) and nurseries or green houses (10%, 6/62). Some workers reported more than one type of work at the time of interview. Participants reported working on a variety of crops and agricultural activities. Crops included asparagus, cucumber, strawberries, blueberries, apples, cherries, watermelon, chili, pumpkins, and peaches. Agricultural activities varied from planting, picking crops, preparing trees, separating apples from the trees to allow fruit growth, tying, and painting trees, de-weeding, cleaning and pruning.

Of those who responded to the individual income question (n=58), farmworkers reported on average a personal annual income of \$21,810. The average household monthly income was \$2,573, for those who responded to this question (n=60). More than half of participants (55%, 33/60) reported having between 3 to 4 dependents under their household income while 30% of workers reported having 5 or more dependents under their household income (18/60), and only 9 participants reported having 1–2 dependents (9/60).

We created a poverty index ratio following guidelines from the 2020 federal poverty guidelines<sup>80</sup> using two variables: (1) How many people, including yourself, live off your personal income?; and (2) Currently, what is your household’s total monthly income, in US dollars? Based on this information, more than a third of farmworkers in our study (38%, 23/60) were classified as living in poverty.



## Health and Social Services

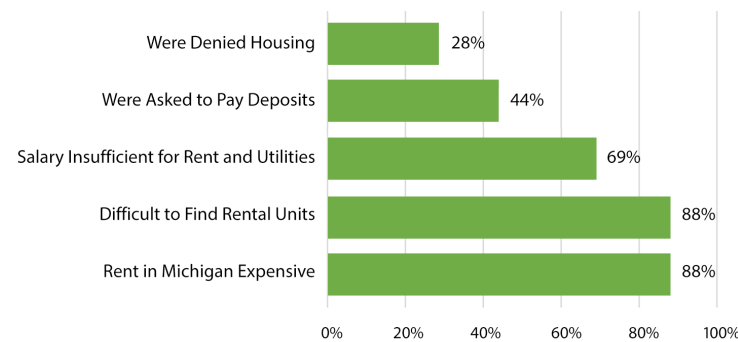
More than a third (42%, 24/57) of workers reported not having health insurance, 21% (12/57) reported that they had Emergency Medicaid, 32% (18/57) reported access to Medicaid, and 5% (3/57) stated they had private insurance. Five workers stated that they did not know whether they had health insurance coverage.

In terms of use of social assistance services, two-thirds of migrant and seasonal farmworkers reported not receiving food stamps (64%, 33/52). Of those with children under age 18 living with them, more than half (57%) reported not receiving food stamps (21/37).

Of the 21 participants with children ages less than 5 years old, 13 (62%, 13/21) reported receiving assistance from the Women’s Infants, and Children (WIC) program and only 8 (38%, 8/21) attended Migrant Head Start programs.

Results from the validated food security scale (USDA Household Food Security Survey Module: 6-item short version)<sup>79</sup> showed that a little more than a third of workers reported high food security (35%, 22/63) defined as no indications of food access problems or limitations while 38% reported marginal food security (24/63) defined as one or two indicators over food insufficiency or shortage of food in the house. A little over a quarter of farmworkers in our study (27%, 17/63) were considered food insecure, categorized as either low food security or very low food security. Low food security is defined by the reduced quality, variety, or desirability of diet, and very low food security is understood as individuals with multiple indicators of disruptive eating patterns and reduced food intake.

Problems Encountered with Housing



## Housing

### Housing Affordability and Expenses

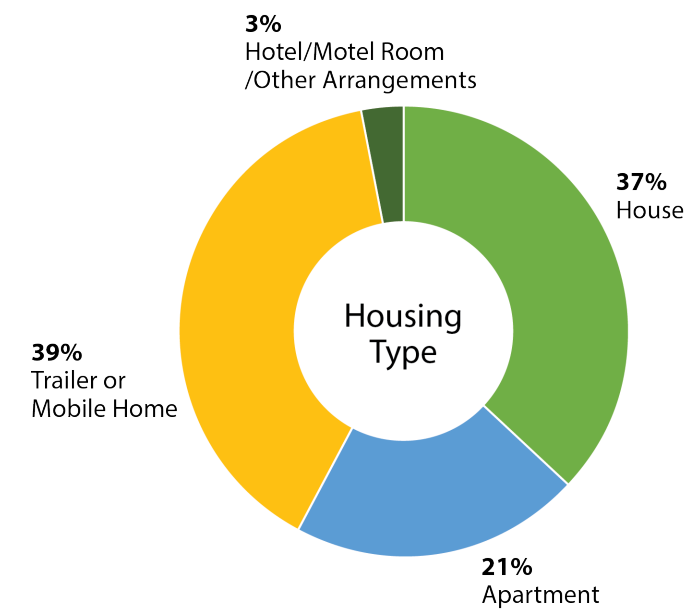
Just over half of farmworkers (57%, 34/60) reported that if they were in need of renting a place to live in Michigan, and considering their earnings and expenses, they would be able to pay in the range of \$200 to \$500 per month. Five farmworkers (8%, 5/60) mentioned being able to pay rent of less than \$200, with only one person stating that he/she was not able to pay rent at all. Finally, 33% (20/60) mentioned they would be able to pay rent of more than \$500 per month.

For migrant and seasonal farmworkers, we asked specifically about their housing options. Most of the participants stated that housing options in Michigan are expensive (88%, 45/51) and that the salary was insufficient to cover rent and services (e.g., utilities) (69%, 35/51). Migrant and seasonal farmworkers also reported that it is difficult to find rental places for agricultural workers (88%, 45/51) and encountered situations when they were asked for a rent deposit (44%, 21/48) that they were unable to pay.

Only one participant reported receiving housing assistance for low-income families, seniors, or people with disabilities program. More than half of participants (61%, 31/51) stated that they would like to receive some support from local and state organizations to

find affordable housing in Michigan, but only 7 participants (13%, 7/52) had the experience of contacting an organization in Michigan for help with a situation related to housing. Participants who reported not being interested in receiving support from organizations for housing either owned a house or were living with relatives or in an agricultural worker housing site that was convenient for their current needs, such as being close to the children's school.

A little more than a quarter (28%, 14/50) of migrant and seasonal farmworker participants reported being denied housing when trying to find rental places in Michigan. The reasons for denying housing varied and included workers with poor credit or no credit, undocumented status and lack of social security or other identification, rental places that do not allow children, female workers with job insecurity situations and the inability to show steady income, discrimination (e.g., "because I am a farmworker and I was dirty, maybe they thought we will destroy it [the place]") and lack of understanding of the non-standard working arrangements for farmworkers (e.g., temporal jobs, working for seasons, low salaries, no social security number) in relation to their received incomes.

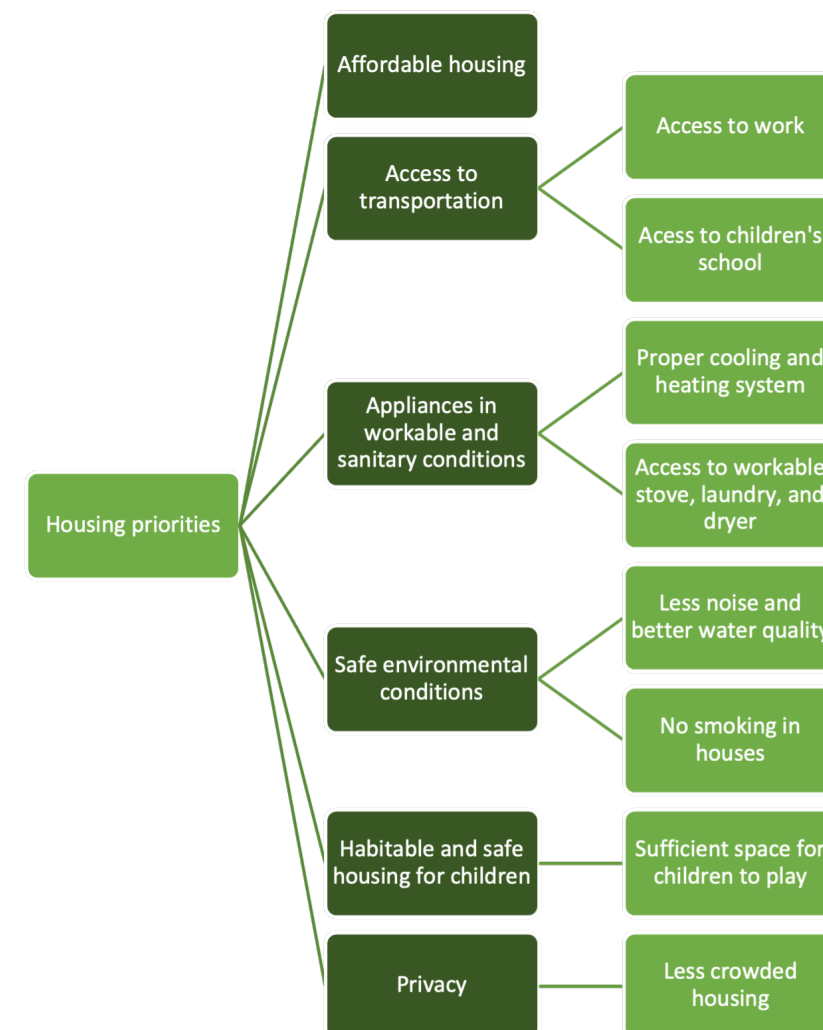


### Housing Type and Priorities

Participants reported currently living in a dwelling described as house (37%, 23/62), apartment (21%, 13/62), trailer or mobile home (39%, 24/62) or other arrangements that included living in motel/hotel room (3%, 2/62). On average, the number of people currently sharing the dwelling, including the participant, was five (with a minimum of 1 occupant and a maximum of 13), with most participants (76%, 47/62) reporting that they live with family members (e.g., partners and children) while about a quarter (26%, 16/62) reported that they reside with co-workers.

About half of participants reported living in an agricultural worker housing site (49%, 31/63) at the time of the interview, with 11 of those being H-2A agricultural workers. The primary reason provided by participants as to why they chose to live in a house provider by their employer was not having other housing options (77%, 23/29). Other reasons provided by non- H-2A visa workers included: not needing to pay utilities (72%, 13/18); inability to find other housing options (44%, 8/18); living close to their workplace (94%, 17/18); and because rental places were expensive and not available for short-term rental during the growing or work-related seasons, which are often only 4 or 6 months long (78%, 14/18).

The housing priorities reported by farmworkers are summarized in the graphic at left.



Physical Characteristics of Housing

Physical characteristics of the home were assessed for all participants regardless of whether they lived in agricultural worker housing sites or outside of employer-based housing. Findings for the main categories for these characteristics are presented below.

*Kitchen.* Most of the participants reported having space in the kitchen to store utensils and other cooking supplies (90%, 56/62) and enough space to store the food of all the occupants in the house (94%, 58/62). The majority reported a working stove (97%, 60/62) and refrigerator (97%, 60/62) and having hot water to wash their dishes (95%, 59/62).

*Bathroom.* Most of the participants (98%, 61/62) reported having toilets inside the living unit and 84% (52/62) stated that the toilet always flushed properly. Under a quarter of participants reported a sewer smell or bad odor in the bathroom (19%, 12/62) and 10% of participants reported that the toilet never or rarely flushed (6/62). Most workers reported having hot water in the bathroom sink (97%, 60/62) and felt that they were able to take a shower without running out of hot water (98%, 60/61). In terms of ventilation, 15%, (9/62) reported no ventilation in the bathroom (exterior window or exhaust fan). Most of the workers felt that they have privacy to use the toilet (93%, 58/62) and the shower (92%, 57/62).

*Bedroom.* Over a third of participants (35%, 22/63) reported using their sleeping room sometimes/always as a common living space by them and others. Participants reported that the average number of individuals sharing the sleeping room was two individuals. However, the range of occupancy was between 1 and 7 individuals per room. More than a half of participants (65%, 40/62) indicated that their mattress was somewhat clean or not clean at all. Four workers reported seeing bedbugs in or around their mattress or sleeping area (6%, 4/62). Six participants (10%, 6/60) reported that they had their mattress on the floor while 11 farmworkers (18%, 11/62) reported using a plastic cover on their mattress due to the unclean conditions of the mattress (e.g., stains, dust).

*Cleanliness.* We asked participants about how often they clean different areas of their living space (toilet, sink and shower, kitchen, sleep room, and living room) and created a summary score with a range of 0–20 (low, medium, and high cleaning frequency). Of those who responded to these questions (n=57), almost all participants (95%) reported cleaning daily or 1-6 times per week, while three participants reported cleaning once every two weeks (5%) and no participants reported never cleaning their living space.

*Ventilation.* A third of participants reported not having air conditioning in their home (33%, 21/63). Most participants (95%, 59/62) expressed that their windows open and close properly in all rooms or house areas to provide ventilation. Most of the participants reporting having window screens in good conditions (87%, 53/61).

Other Interior Housing Features

The majority of participants (89%, 55/62) reported not having cracks or broken windows. Of the 62 respondents, 6% (4/62) indicated having large holes and cracks in the house and 15% (9/62) reported the presence of large holes, cracks or bulges in the ceiling of their house.

Only 12% (7/60) reported having peeling paint inside their house, 8% (5/62) stated not having a closet, wardrobe or any other space to put their clothes inside the house. The majority of participants stated that the conditions of the furniture were good or fair (90%, 56/62). Three participants (5%, 3/62) reported not having adequate furniture (tables, chairs) to eat.

In terms of hearing noises through the walls of the house, 14% (9/63) reported always hearing noises, while 21% (13/63) reported sometimes and 40% (25/63) reported never hearing noises.

One third (34%, 21/62) of farmworkers mentioned not having access to a functioning washing machine and a little more than a third of participants reported not having access to a functioning dryer (39%, 24/61).

Exterior Housing Features

Only 14% (8/59) reported seeing paint peeling from the exterior of their house. In terms of door screens, the majority 69% (43/62) reported screens without rips or tears.

Twenty-one percent of participants reported observing garbage outside of their house sometimes or often [13% (8/62); 8% (5/62)], respectively. The vast majority of workers 92% (57/62) reported not having standing water outside their house and 8% (5/62) reported problems with sewage and standing water.

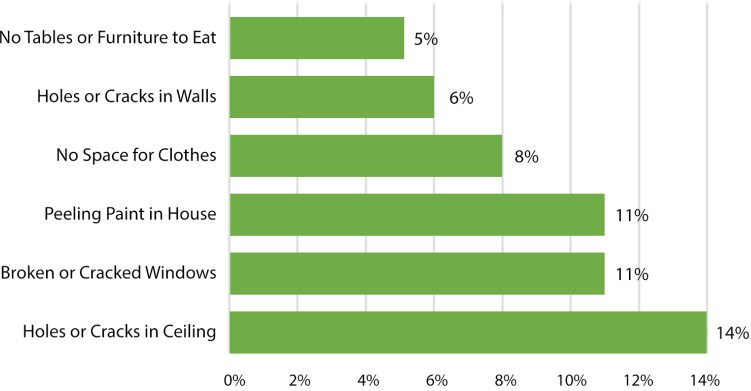
Safety

We created a summary score using tertiles for the following variables assessing safety issues in the participant’s house: exposed electrical wires; insufficient number of electrical outlets inside the house to avoid use of long extension cords; non-working smoke detectors; non-working or no access to fire extinguisher; not having a door that can lock when using the bathroom or taking a shower; and overall, not feeling safe in the place where they live. Responses could range from 0 safety hazards to 6 safety hazards present in the home. Of the 55 workers who gave responses to the safety summary score, we found that about half of the participants (53%, 29/55) expressed not having any safety concerns. Forty percent (22/55) reported experiencing 1 to 2 safety hazards in their current home while 7% reported experiencing between 3 to 4 safety hazards. The most frequent individual safety hazard reported was not having a working fire extinguisher in the home (29%, 18/61).

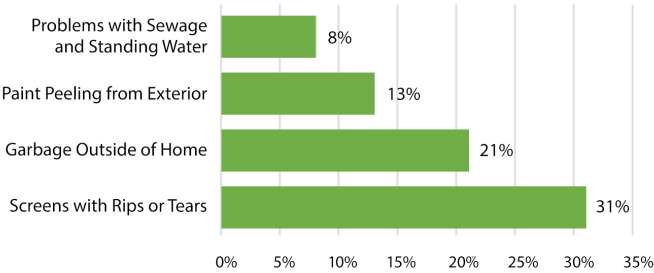
Pests

Most participants reported never or rarely seeing cockroaches inside their house (87%, 55/63) and almost two-thirds of participants (60%, 38/63) reported not seeing rats or mice. In terms of observing droppings of mice or rats inside the house, 13% reported seeing dropping sometimes or often (8/63). When participants were asked about seeing insects inside the house (e.g., ants, wasps), 5% (3/63) reported always, 11% (7/63) often, and 25% (16/63) sometimes saw insects inside the house.

Interior Housing Features



Exterior Housing Features



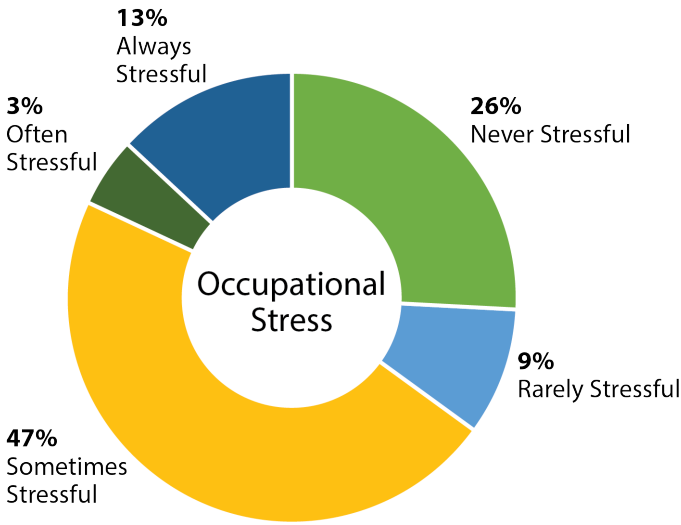
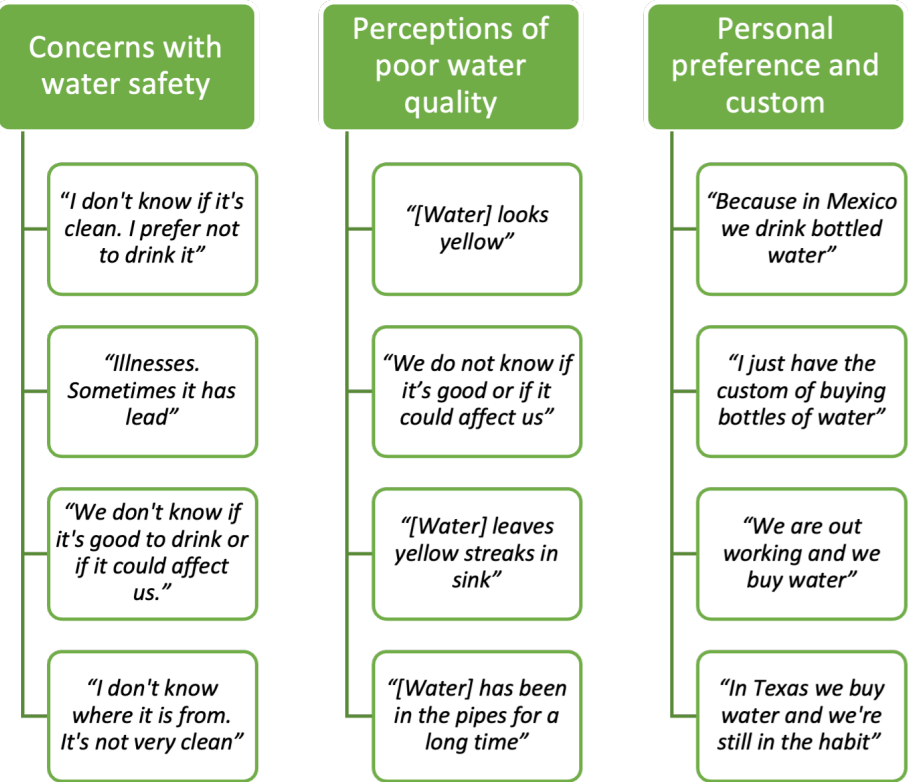
Environmental Problems: Water, Noise, Waste, Pesticides or Insecticides

We assessed potential environmental exposures by asking workers about their residential proximity to sites that could potentially be sources of exposure such as: pesticides (e.g., smell of pesticides or insecticides from their house), landfill, noise, factories, and fumes (e.g., from cars or trucks). We summarize responses into tertiles with responses ranging from 0 to 4. Of the 62 workers who provided responses to these questions, almost three-quarters of the sample (74%) reported experiencing 1 to 3 of these potential environmental exposures, 7% between 4 to 6 of these environmental exposures, and 19% reporting none of these exposures.

Over three-quarters of participants (79%, 50/63) reported always or often drinking bottled water, while 19% reported drinking bottled water some of the time (12/63). Among 59 respondents, the average cost spent on bottled water, as reported by the workers, was \$45 per month with a minimum expenditure of \$5 to a maximum of \$200 per month.

Additionally, we asked about water quality for those who reported not drinking tap water. Participants reported not drinking water directly from the faucet for the following reasons: bad odor (15%, 8/54); bad taste (21%, 11/52); unusual or abnormal color (22%, 12/54); has sediments (24%, 13/54); and perception that the water is contaminated with chemicals (8%, 4/51).

In the following graphic we present direct quotes from the participants expressing reasons for not drinking the water provided to them at home and/or at work:



Working Conditions

Of the 63 farmworkers interviewed, the average number of years of farmworkers working in agriculture was 16 years (range: 1–47 years). Workers reported working an average of 9 hours per day (range: 4–15 hours per day). During peak crop seasons, farmworkers reported working an average of 11 hours per day (range: 7–16 hours per day). The average number of co-workers at the worksite of participant, at the time of the interview, was 35 workers (range: 2–250 workers).

In terms of workers receiving personal protective equipment from their employers, almost a third of participants (32%, 20/62) said they never or rarely receive personal protective equipment from their employer, while 13% said they sometimes receive personal protective equipment (8/62) and 55% (34/62) said they often or always receive personal protective equipment. The majority of participants reported being allowed to take breaks at work (other than lunch) (85%, 53/62), with the average number of breaks being 2 (range: 0–5), with an average length of 14 minutes (range: 0–30).

When asked about ‘how often they felt their job was stressful?’ almost half of participants shared that their work was sometimes stressful (47%, 29/62) and 13% (8/62) reported that their work was always stressful. When asked about their health concerns due to exposure to chemicals and pesticides at work, a quarter of participants (26%, 16/62) stated being sometimes worried and 23% (14/62) were often or always worried about exposure to chemicals of pesticides at work.

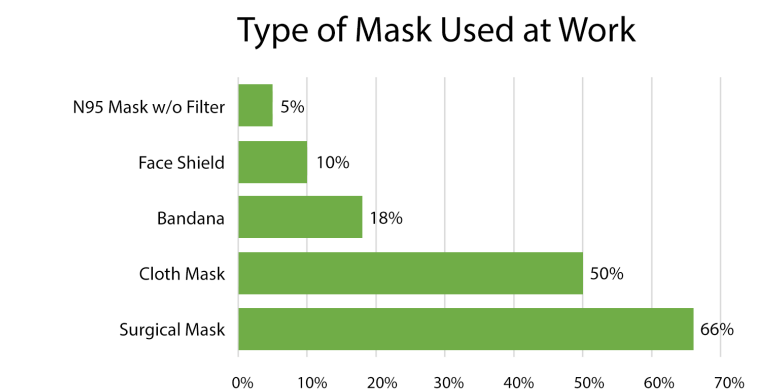
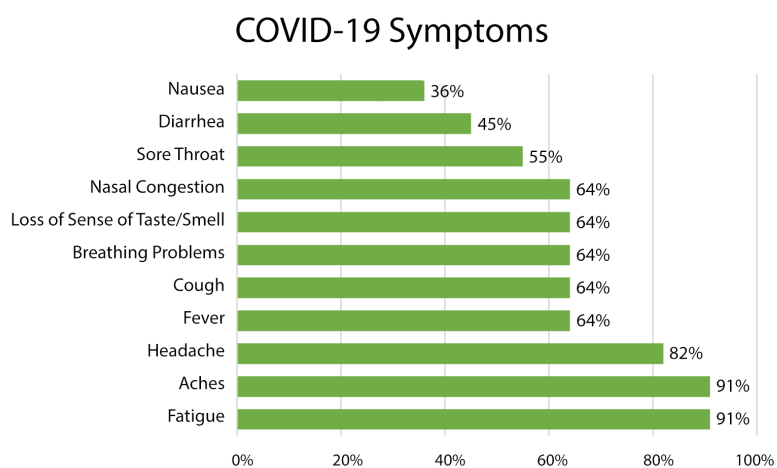
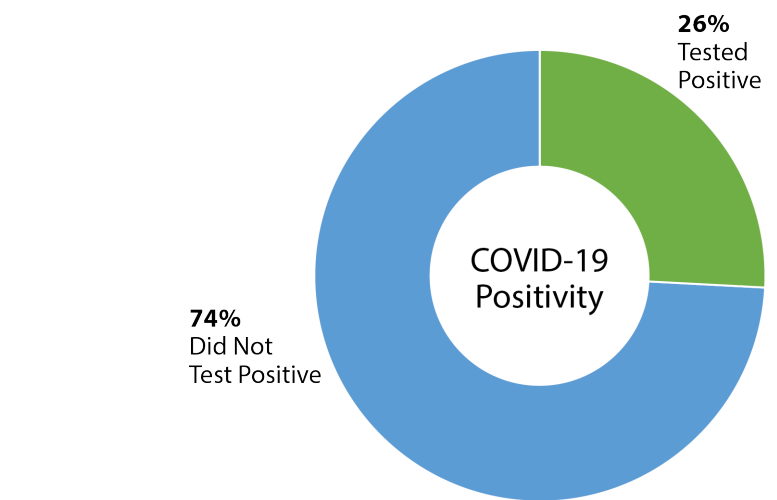
Factors of Vulnerability at Work and Work Dynamics

We asked migrant and seasonal workers if they had ever been denied work because they were not an H-2A farmworker. Almost three-quarters of these workers (74%, 38/51) reported never or rarely encountering a situation where they were denied employment because of their work status while 18% (9/51) reported that they encountered this situation sometimes, and 8% (4/51) reported that they were often or always denied employment because they were not H-2A farmworkers.

When farmworkers were asked about situations where they suffered from verbal abuse from their direct supervisor (e.g., yelling, insults), 31% (19/62) stated that they suffered from verbal mistreatment. When asked specifically about being threatened at work (e.g., being deported, not invited to work the next year, losing their job), about a quarter of workers (26%, 16/62) reported experiencing these situations. In terms of harassment, 5% (3/62) reported being sexually harassed on the job, all of whom were female.

Notably, when workers were asked if they felt they were treated as a human being by their direct supervisor, many farmworkers shared feeling that they were not treated as human beings by their direct supervisor (74%, 46/62), while 10% (6/62) responded neutrally to the question, and 16% (10/62) responded that they did feel they were treated as human beings by their direct supervisor.

For those living in agricultural worker housing sites, farmworkers where asked if their direct supervisor allowed them to speak with or have external visitors. Of those who responded, more than a quarter (31%, 8/26) said they were never allowed to speak with or have external visitors, while 12% (3/26) said rarely, and about half said that they were often or always able to speak with or have external visitors at their housing (58%, 15/26). Similarly, farmworkers were asked if they could leave the agricultural worker housing sites on their free time. Of those who responded to this question, almost a third (32%, 8/25) said they were never allowed to leave, while 8% (2/25) said sometimes, and about half said that they could freely leave the agricultural worker housing sites often or always (60%, 15/25).



## Health and Well-Being

### Coronavirus Testing and Symptoms

More than two-thirds (69%, 43/62) of farmworkers self-reported being tested for COVID-19. Among those tested, 26% (11/43) self-reported testing positive for COVID-19.

Among those self-reporting testing positive for COVID-19, a variety of symptoms were reported: fatigue (91%, 10/11), aches (91%, 10/11), and headache (82%, 9/11) were the most common; followed by fever (64%, 7/11), cough (64%, 7/11), breathing problems (64%, 7/11), loss sense of taste or smell (64%, 7/11), nasal congestion (64%, 7/11), sore throat (55%, 6/11), diarrhea (45%, 5/11) and nausea (36%, 4/11).

The 11 participants who reported testing positive for COVID-19 stated that they quarantined. Five of these 11 farmworkers quarantined for a minimum of 12 days and maximum of 15 days, and six of the 11 farmworkers quarantined for 21 days as minimum and 42 days as a maximum. Of the 11 participants who quarantined, six (55%, 6/11) reported not receiving pay from their employers. Only one participant reported that they received financial assistance not related with her/his employment. Five reported that they received food assistance, five reported that they received support from friends and family, and three reported that they received non-financial assistance from organizations.

Farmworkers were asked about their perceptions about getting infected with COVID-19; a little more than a third (34%, 21/62) stated being very worried, while 19% (12/62) stated that they were moderately worried. Similarly, when asked if they were worried that a family member could get infected with COVID-19, more than half of participants stated being very worried (65%, 40/62).

### COVID-19 Preventive Measures at Work

Overall, more than two-thirds of workers reported using 3 or more protective measures against COVID-19 infection at the workplace. Specifically, 61% (38/62) of workers reported using some type of face covering or mask. Among those 38 individuals, the vast majority used a type of surgical mask (66%, 25/38) or cloth mask of at least two layers (50%, 19/38),

while some reported using a bandana or home-made cloth mask (18%, 7/38) or a face shield (10%, 4/38), with only 2 (5%) reporting using N95 masks without a filter. Some individuals reported using multiple types depending on the work situation.

In terms of social distancing, half of the workers (54%, 33/61) reported being able to keep a distance of at least 6 feet from other co-workers most of the time, while 20% (12/61) reported sometimes, and 26% (16/61) reported not being able to maintain social distancing at work.

We also asked workers whether they were able to wash their hands with soap and water while they were working. More than a third of workers (43%, 26/61) reported that they washed their hands 2 to 4 times during a working day, 21% (13/61) stated that they washed their hands 5 to 7 times, 15% (9/61) 9 to 10 times, and 10% (6/61) more than 10 times. Seven workers (11%) reported washing their hands with soap and water only once or not at all while working.

### COVID-19 Vaccine

More than half of the sample of farmworkers (58%, 36/62) self-reported being vaccinated. Regardless of vaccination status, the vast majority of farmworkers considered that it was important to receive the COVID-19 vaccine (93%, 55/59). We asked participants about their perceptions on why they thought it was or was not important to get the COVID-19 vaccine. Overall, farmworkers, regardless whether or not they were vaccinated at the time of the interview, acknowledged that the vaccine was important to protect their health, their families, and the greater community, as exemplified by participant quotes displayed in the graphic at right.

Four participants expressed that receiving the COVID-19 vaccine was not important. Some of the reasons provided by these four workers included: lack of trust in the government (*"The government made this to kill us"*) and distrust regarding the protection provided by the vaccine (*"I have seen that most of unvaccinated people do not get sick and those that get the vaccine, they get sick. Where is the protection?"*).

**"It is important for work because of all the contact at work."**

"Many people who studied [to develop the vaccine] worked very hard on this vaccine. In honor of that sacrifice—that of studying, working—it is worth it to get the vaccine. It was worth it for everyone working together for us. To others it is a privilege to be in a country and have access to a vaccine."

"Because this is a requirement at work and because of the things that are happening with people sick because it is a contagious disease."

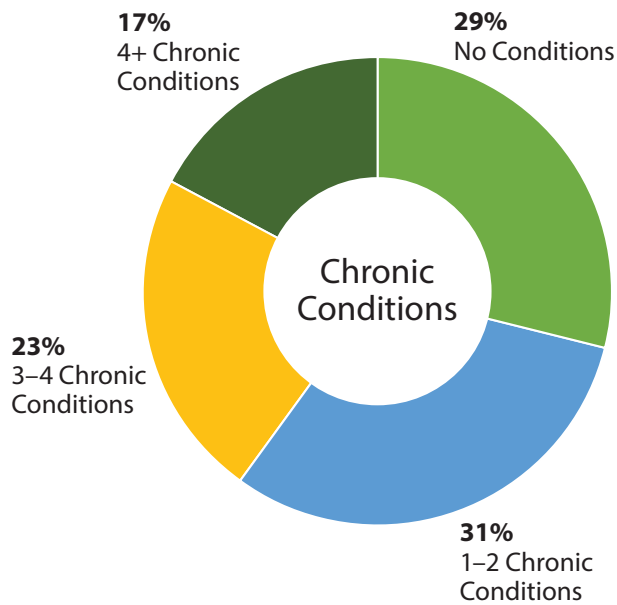
**Why it is important to get the COVID-19 vaccine?**

"Because you feel safer [with the vaccine] and have a lower chance of getting sick. Also, to protect the children who can't get the vaccine, and if you get sick, they will also get sick."

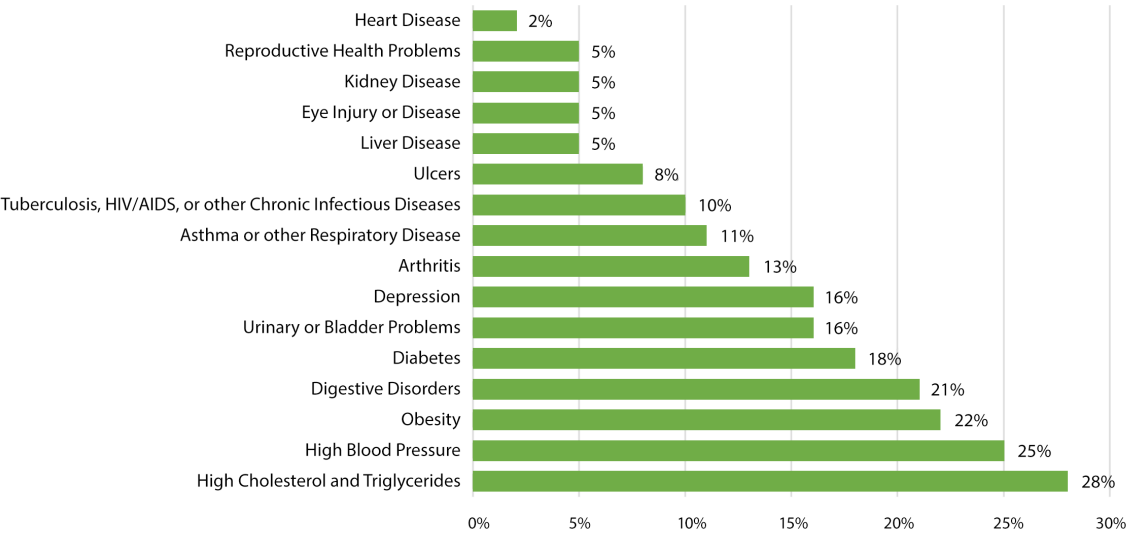
Health Status

We asked participants about the last time they had a general health check-up with any type of health care provider (e.g., nurse, doctor, health care assistant). More than half of workers (58%, 35/60) stated that the last time they had a general health checkup was in the last 5 months, while 15% (9/60) reported that they had had a check-up within the previous 6-12 months, and 25% (15/60) stated that it had been more than 12 months since having a general health check-up. One participant mentioned that he had never had a general health check-up.

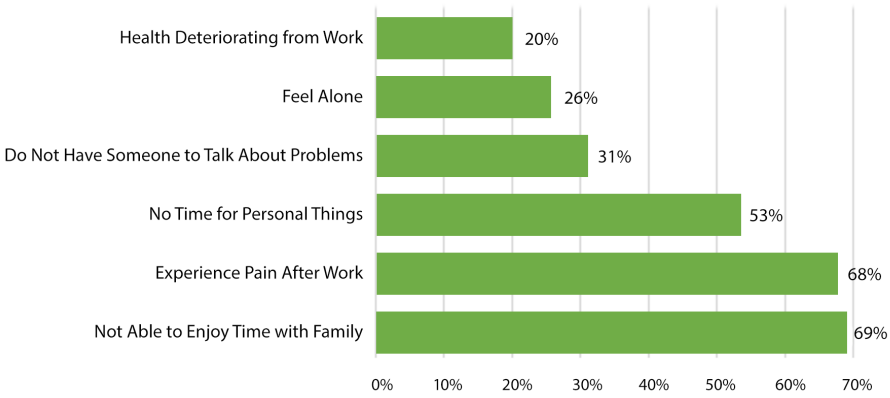
Participants were asked about chronic health conditions. Of those who answered this question, a third of workers (31%, 15/48) expressed having 1–2 chronic conditions diagnosed by a health care provider, 23% (11/48) reported 3–4 chronic conditions, 17% (8/48) 4 or more chronic conditions and 29% (14/48) expressed not having been diagnosed with a chronic health condition by a health care provider.



Diagnosed Chronic Conditions



Quality of Life



Among those experiencing any chronic health conditions, 65% (22/34) reported that they took medication for their chronic condition(s) while a little over a third reported that they did not take medication (35%, 12/34).

The following were the chronic health conditions diagnosed by a health care provider, as reported by farmworkers, presented from least to most common: heart disease (2%, 1/61), liver disease (5%, 3/61), kidney disease (e.g., kidney stones, kidney failure, kidney injury) (5%, 3/61), eye injury or disease (5%, 3/61), reproductive health problems (e.g., endometriosis, fibroids, ovarian cyst) (5%, 2/37), ulcers (8%, 5/61), tuberculosis (TB), HIV/AIDS or other chronic infectious diseases (10%, 6/60), asthma or other respiratory diseases (11%, 7/61), arthritis (13%, 8/61), depression (16%, 10/61), urinary or bladder problems (16%, 10/61), diabetes (18%, 11/61), digestive disorders (e.g., gastritis, gallbladder disease or stones, pancreatitis) (21%, 13/61), obesity (22%, 13/60), high blood pressure (25%, 15/61), and high cholesterol and triglycerides (28%, 13/46). Other conditions that were infrequently reported included allergies to pollen and hemorrhoids.

Well-being and quality of life

Workers were asked about their perception of health and asked if they feel their health was deteriorating due to the work they performed. More than a quarter (28%, 17/60) chose the response “neutral”, while 20% (12/60) agreed with the statement of feeling their health deteriorating due to work. A little more than half of the participants disagreed with the statement that their health was deteriorating due to their work (52%, 31/60). When asked about pain due to work, more than two-thirds of workers (68%, 41/60) reported that they experience pain in their body after work.

When assessing quality of life, including social isolation, 31% (19/61) stated that they do not have someone to talk to about their concerns or problems, a quarter (26%, 16/61) reported feeling alone and more than a third (69%, 43/62) expressed not having the opportunity to enjoy time with their family as much as they would like because of work. Similarly, more than half of workers (53%, 33/62) mentioned not having time to do personal things outside work. Among those workers in a personal relationship, over a third (39%, 16/41) were worried about their relationship with their partners because they did not have time for their relationship.

Future

Most workers (79%, 49/62) would like to have educational or technical opportunities to be able to find a different job than their current work and more than half of farmworkers (61%, 37/61) stated that they would not like to be a farmworker all their lives. Among those farmworkers with children, most workers (84%, 46/55) mentioned that they did not want their children to follow their footsteps as farmworkers. Some of the reasons given by participants as to why they do not want their children to become farmworkers included:

“The fields are a onerous job without many opportunities. It’s very exhausting. I don’t want my kids to suffer. I want them to have a better, more dignified job, to take maximum advantage of studying, so they’re not under the sun. I don’t want them to suffer like I have suffered. I want them to be able to provide for their family. I am very obligated to work and support my family.”

Reasons why workers do not want their children to become farmworkers

“I don’t want them to go through the same thing that I do. We want better education for them.”

“The job is difficult, tiring, and wearing. The sun is very strong and it is difficult to endure the heat.”

“I would like for my children to have a different job because in agriculture you suffer from the cold, rain, and heat. I do not want them to have this hard job.”

We asked participants about opportunities for their children. Of those farmworkers with children who responded, more than half (66%, 31/47) reported being worried about not having better educational opportunities for their children. Among those with children under 18 years of age living with them who responded to the question about parenting concerns, 76% (28/37) felt that it was difficult to parent their children due to their work schedule. Similarly, those with children under 18 years of age living with them who responded to the question about childcare conflicts, 59% of farmworkers with minor children living with them (19/32) reported not being able to work because they do not have childcare options.

Farmworker Perceptions and Suggestions

In both phases of the study (qualitative and quantitative), farmworkers shared their suggestions to improve their housing and working conditions. Farmworkers expressed the need for a dignified and safe working environment independent of legal status and recognized human and worker’s rights through fair treatment and salaries, access to affordable and quality housing, more employment opportunities, and an independent commission for workers to present both housing and working related complaints without fear of retaliation.

We present the following quotes, as examples:

- “We are like ghosts; they do not see us or recognize us. We are not paid well, if you are undocumented, there is no equality. I would like there to be a commission that allows workers to present complaints. There are incentives for growers, but not for farmworkers. Once I had a grower who got angry at me because I had to go elsewhere to work. He scolded me and insulted me. He was very ungrateful, I came to help him and then he ends up mistreating me.” —Male Migrant Farmworker
- “[I wish there was] a more humane and equal treatment [for workers]. Agriculture is a very important and dignified job, but they do not value farmworkers. I wish there was more awareness and more dignified treatment for all farmworkers. We suffer a lot. There are places that pay very little. There should be rights for workers and appropriate pay. It is not easy to work in agriculture.” —Male Migrant Farmworker
- “They should provide access to housing for local people and not just H-2A workers. In the labor camp that I work in they charge rent to farmworkers, \$250 per month for trailers. There should be more information about access and camps that are open for local workers. There is no housing for migrant or local workers, everything is for H-2A workers. They do not hire families and local people. They prefer H-2A workers from Mexico.” —Male Seasonal Farmworker
- “They should give them permits to work in the United States, they should give driver’s licenses. There are a lot of single mothers and they should provide driver’s licenses because many mothers have problems taking their kids to the doctor. Regulations for workers would help. It would help so that they get a Mexican passport or Mexican registration to help us more. An ID would at least help us. I know people that have been here for years, and they do not have any identification. Having adequate housing for families with children that are appropriate. In the labor camps, I once lived with 3 or 4 men in a house. It is dangerous. Very complicated when you have children. It would be good to help out workers with security deposits for housing. Have an agency that helps workers look for housing for families and everyone in general. Have information about housing and work and that we get that information in Michigan. Through outreach, they could give us information or at Telamon. Through the schools they could give information to many families. A way so that all agencies are giving out the same information.” —Female Seasonal Farmworker

- “In the labor camps growers are very strict and you feel uncomfortable living in their housing. And you do not say anything, you feel like there is no privacy because some growers do not give you privacy. They can come inside the house because they are the owners. You do not say anything. There should be more accountability with growers with respect to farmworkers, housing, and improving inspections.”

— *Female Seasonal Farmworker*

- “You feel embarrassed and afraid to rent a house. If you do not have SSN, they will not rent you anything. I wish there were other laws for agricultural workers. They should not be so strict with undocumented migrants. There should be more equality and balance between local people and H-2A workers. They are displacing us. I wish we had more independence and privacy outside of the fields.” — *Male Seasonal Farmworker*

- “[My priorities for housing are] to have a home to live close to the fields and not have to be locked inside. That our children have their space and there are no problem with neighbors. There is no space for children in the labor camps. The labor camps can be dangerous for children and women because they drink alcohol. Children need better quality of life. You need space and privacy. Avoid violence and traumatic events in the labor camps.” — *Female Seasonal Farmworker*

## Conclusions

**OVERALL**, our study found that for farmworkers in Michigan, housing access, affordability and quality is an important and complicated issue; one that is often closely tied to employment and working conditions.

We highlight several important aspects of the farmworker housing situation that emerged from our study. First, we found that the economic marginalization of farmworkers and the resulting vulnerability from that marginalization may affect their housing accessibility and housing quality. Overall, farmworkers in the present study reported very low annual incomes with more than half of participants reported having between 3 to 4 dependents and a third of workers having 5 or more dependents under their annual household income. More than a third of farmworkers were classified as living in poverty. Notably, this is more than three times the official poverty rate in the general US population in 2020 at 11.4% and US-born Michiganders at 13%.<sup>3,4</sup>

Furthermore, almost half of the participants reported lacking any kind of health insurance. This is an important issue given that many of the workers in our study reported suffering from various chronic health conditions, which is consistent with what has previously been reported in research with farmworkers in the US.<sup>81,82</sup> For instance, our study showed a prevalence of cardiovascular risk factors such as obesity (22%), high cholesterol and triglycerides (28%), and hypertension (25%) consistent with what has been reported in studies of Latino/a farmworkers.<sup>83–85</sup> Poor health is an important contributor to job and/or economic insecurity, which can impact housing affordability and access.

Notably, food insecurity is an important issue for farmworkers. Almost two-thirds (65%) of farmworkers interviewed were classified as having marginal or low/very low food security,

with over a quarter classified in the low/very low category, significantly higher than what has been reported for the general US population (10.5%) in 2020 and almost seven times greater than the 3.9% of US households facing very low food security.<sup>4–6</sup>

Our results are consistent with previous studies on food insecurity with farmworkers with high prevalence of food insecurity in the range of 47% to 82%.<sup>86–88</sup> A majority of participants reported that they did not receive food stamps even though many participants reported having children under the age of 18 years living with them. Food insecurity is an important indicator of economic insecurity, which in turn can affect housing affordability and access. In addition, housing that may be more affordable for farmworkers may be located in areas that are considered food deserts, thus contributing to higher levels of food insecurity.<sup>89,90</sup> It is important to note that it is possible that even more farmworkers in Michigan suffer from food insecurity than what we are reporting in this study, as participants were referred through migrant outreach workers from the Migrant Resource Councils and therefore, may have had greater opportunities to access social services and other resources.

Farmworkers in our study face many challenges when it comes to housing access and affordability, which are important factors for health as spending a larger amount of income on housing may affect the ability to access nutritious food, health care, and other health-promoting resources. Most of the migrant and seasonal farmworkers interviewed in our study stated that housing options in Michigan were expensive and that their salary was insufficient to cover rent and services. They reported difficulty in covering rental deposits and often opted to reside in an agricultural worker housing site due to lack of other housing options. About a quarter of migrant and seasonal farmworkers reported being denied housing when trying to find rental places in Michigan. Many of the reasons stated for the denial of housing are closely linked to the working conditions and occupational situation of these workers. For example, workers who are undocumented or do not have identification documents (e.g., driver license)

may face challenges securing housing. Additionally, having an insecure job situation and non-standard working arrangements including a lack of steady income and the migratory or temporal nature of farm work can impact the ability for a worker to access rental housing and may contribute to denial of housing among these workers. Women workers and workers with families reported facing additional challenges regarding finding housing that accepted children.

Despite the challenges faced, farmworkers expressed that their housing priorities were affordable quality housing (clean, safe, habitable conditions) for them and their families, with access to services, schools, and transportation. Notably, the majority of participants stated that they would like to receive some support from local and state organizations to find affordable housing in Michigan; however, very few participants reported having any previous experience with receiving help in accessing housing.

An important area of concern for workers related to housing was residential environmental exposures. More than three-fourths of the workers (81%) interviewed for this study reported experiencing varying types of potential sources of environmental exposures and hazards near their residences such as: pesticides (e.g., pesticide or insecticide odor near their house), landfill, noise, factories, and fumes (e.g., from cars or trucks). In addition, exposure to standing water, garbage, and sewage near the home was a concern noted by a quarter of the participants. Finally, water safety and quality were concerns for farmworkers. This is an important issue for farmworkers, as they require access to safe and clean drinking water throughout the day and after working long hours in challenging, often hot conditions to avoid dehydration and subsequent adverse health impacts due to decreased water consumption.

Overall, physical housing conditions and characteristics (both the interior and exterior aspects of the home) were considered by farmworkers as functional and adequate. However, some aspects of housing quality are important to note from a health perspective. Over a third of farmworkers reported using

their sleeping room as a common living space by them and others, a situation that could impact the quality of sleep for farmworkers if they lack privacy and a quiet space for rest. More than a half of participants indicated that their mattress was “somewhat clean” but issues of bedbugs, having the mattress on the floor, and using plastic covers on their mattresses was shared by some of the workers.

A little more than a third of participants reported not having air conditioning in their home and about a third reported having door screens with rips or tears. These are important issues of housing quality in a state like Michigan, where temperatures can soar in the summertime, and insects such as mosquitos are commonplace. Heat exposure, and resulting heat-related illness, is an important occupational health hazard for farmworkers.<sup>91–93</sup> Heat exposure at home and the inability to cool down at night after a long workday can adversely affect sleep quality and other important health outcomes for farmworkers.<sup>91, 94</sup> Additionally, window and door screens are an important preventive measure not only to cool a home, but also to keep mosquitos and other insects out of the home and avoid transmission of insect-borne diseases.<sup>95</sup> In Michigan in particular, two mosquito-borne viral diseases—West Nile virus, and Eastern equine encephalitis—pose a fatal threat to humans.<sup>96, 97</sup>

Sharing of sleeping rooms, not having adequate or clean beds and areas for rest, and not being able to cool down after heat exposure during the workday all have important health implications as they can impact sleep quality. Poor sleep quality among Latino/a farmworkers had been associated with poorer indicators of health, including poor self-rated health, elevated musculoskeletal pain, elevated depressive symptoms, and greater anxiety.<sup>73</sup> A substantial body of research has reported that sleep disorders, as measured directly or measured indirectly through presence of sleep disorder symptoms, are associated with workplace injuries and multiple chronic health problems.<sup>73, 98–100</sup> One important indicator of housing quality as reported in previous research with farmworkers is that air conditioning was associated with better sleep quality and has substantial health implications through its positive association with improved sleep quality.<sup>73</sup>

Bearing in mind the results on housing conditions, it is important to acknowledge that current housing regulations focus on minimal standards for housing conditions. However, the characteristics of housing quality considered to be in compliance by housing regulations may still affect the health and well-being of farmworkers.<sup>40</sup> For example, while having one shower for every 10 people or one toilet and handwashing sink per 15 people is in compliance, the lack of services and privacy may affect farmworker quality of life and may be insufficient to meet the needs of adults whose employment exposes them to dirt, pesticides, and large amounts of perspiration.

It is important to note that the data on housing conditions in this study are based on self-reported information and perceptions of housing conditions and not on a direct inspection and assessment of housing characteristics as related to specific housing regulations. Workers’ perceptions of housing conditions may be affected by previous experiences or situations, particularly in the home country of the worker.

For example, in our previous qualitative work with farmworkers in Michigan, we found that for some farmworkers coming from highly disadvantaged backgrounds, cooking using a gas stove versus a wood-burning stove or having a concrete floor in the house instead of soil or dirt floor was considered a luxury for them. With this in mind, it is plausible that workers may report better housing conditions than what could be found through a direct housing inspection.

As noted in this report, for farmworkers, housing access and quality is intrinsically interconnected with employment. The type of housing offered to workers and the ability to pay for fair and safe housing are all aspects of housing access that are impacted by the work arrangements, work schedules, and wages that are offered to farmworkers. For this reason, in addition to assessing housing characteristics, we also assessed relevant working conditions.

Participants in the study reported working in a variety of agricultural tasks related to field crops, packing plants, nurseries or green houses and overall, farmworkers reported having worked in agriculture over many years. Par-

ticipants reported long work schedules, with the ability to take breaks. Participants stated that exposures at work were a concern, including those from chemicals and those related to the COVID-19 pandemic. For instance, about a third of farmworkers reported not being offered personal protective equipment by their employer, an important safety and health issue given the nature of agricultural work and an important issue during the COVID-19 pandemic. Interestingly, over half of our sample reported using some sort of mask or face covering, implying that the use of protective equipment may be important for farmworkers; however, they may be expected to purchase and use their own personal protective equipment.

The dynamics of the working environment was also a salient issue for farmworkers. Participants discussed the stressful nature of their work and shared experiences of dehumanization, mistreatment, verbal abuse, and threats at work. This working environment and work dynamic can jeopardize the health and safety of these workers and promote a culture of silence and intimidation among workers that can potentially lead to labor exploitation. Because work is closely linked to housing access and quality for farmworkers, a culture of silence at work may also translate into accepting inadequate or poor housing conditions, particularly if workers feel threatened or afraid to complain due to fear that they may not only lose their job, but also their housing.

The COVID-19 pandemic exacerbated the already challenging and difficult housing and work conditions for farmworkers. For instance, workers who reported having tested positive for COVID-19 and who had to quarantine noted that their economic situation worsened, due to not receiving economic compensation from their employer—an important contributor to housing insecurity. The COVID-19 pandemic highlighted how low-wage workers struggle at even covering basic needs such as food and shelter due to having to live paycheck to paycheck and without social and economic protections, as is the case for farmworkers.<sup>4</sup>

When assessing worker’s perceptions about their future and the impact on their families, most workers expressed wanting to have more educational or technical opportuni-

ties. Half of farmworkers stated that they would not like to be a farmworker all their lives and among those with children, most did not want their children to work in agriculture mainly because of low salaries, and hazardous and harsh conditions. Farmworkers had concerns about not being able to have better social and educational opportunities for their children and felt that it was difficult to parent their children due to their work schedule and work demands—this is an especially salient issue for female workers who often bear the responsibility for arranging childcare. Lack of childcare was a particularly significant issue for single mothers and during the height of the pandemic. Moreover, lack of adequate space for children to play in and around the home was a concern noted by participants, thus potentially contributing further to the lack of developmental and play opportunities for these children. This was particularly important issue for those families living in agricultural worker housing sites.

These findings are significant for several reasons. First, it is well established that access to quality education and developmental opportunities is a powerful structural factor to break intergenerational cycles of poverty, but for the children of farmworkers social interactions and quality education are not easy to achieve given the housing and working conditions of their families. Second, social disadvantage clusters in families across multiple generations<sup>101</sup> and children in poverty are more likely to have a lower socioeconomic position as adults who accumulate less wealth to pass on to future generations, as may be the case for farmworkers.<sup>102</sup> Supporting access to quality educational opportunities, as well as opportunities for social and economic development for children of farmworkers, and the workers themselves, is a fundamental human right and has broad consequences for communities and society as a whole. Children who lack these opportunities may face challenges in adulthood in accessing better job opportunities, obtaining a living wage, and being able to provide for their own children, thus contributing to the cycle of poverty and inequity across generations. In order to break the intergenerational cycle of poverty, inequity and disadvantage among farmworkers and promote healthy and produc-

tive communities, an intentional and proactive focus on improving the health, well-being, and social circumstances of farmworkers and their families is essential. Providing accessible and affordable housing for farmworkers along with improving their working conditions and economic compensation is an important step to address this issue in Michigan.

Suggestions provided by farmworker participants to improve their housing and working conditions included recognizing the need for a dignified and safe working environment, fair treatment and payments, having balance and equity in the hiring process of migrant, seasonal and H-2A farmworkers, and the creation of an independent easily accessible reporting system through a neutral party to be able to anonymously present and address work-related and housing-related complaints without fear of retaliation. Currently, systems of reporting are mainly through governmental websites that are often not easy to navigate or accessible for farmworkers, particularly those facing language barriers and those who may only be able to access the system via a cell phone. Other suggestions provided by farmworkers included increasing housing options for all workers, and the regularization of legal status of undocumented farmworkers or a legal working permit for those that have been working in the US for years, which could help with access to more housing options. Finally, improvements in housing for families and workers with children specifically, more coordination from organizations that provide information and housing allocation for farmworkers, and offering culturally and linguistically appropriate services for farmworkers when searching for housing options were other suggestions offered by participants. These suggestions are consistent with what we have found in with our previous work with the Michigan Farmworker Project.<sup>8,26</sup>

The present study was intended to provide a broad and overall description of housing access, affordability and quality for farmworkers living in and outside of agricultural worker housing sites, including migrant, seasonal and H-2A farmworkers. Our results emphasize the need to conduct in-depth epidemiological studies to follow up on the important issues

highlighted in this report by using a larger representative sample of workers across the state of Michigan. The results of this study need to be interpreted with the consideration that the referrals of farmworkers was done by migrant outreach workers from only three Migrant Resource Councils (MRCs). Thus, it is plausible that participants included in this study had greater access to social services or other resources, or had better housing and working conditions due to outreach activities in the agricultural worksites and regions where the data were collected.

Future epidemiological studies should assess health outcomes in relation to housing and working conditions while capturing the dynamic nature of agricultural working activities with migrant, seasonal and H-2A farmworkers. Supporting community-based participatory research initiatives to assess these important public health issues should be an important priority for the state of Michigan given the important contributions of these workers to the economy and food system of the state and the country.<sup>32</sup> Furthermore, to support ongoing research efforts, any changes or improvements in housing and working conditions for farmworkers should be assessed on an ongoing basis in order to have measurable outcomes. Without these data, it is difficult to address housing challenges for farmworkers.

In sum, fair housing access, affordability, and quality must be assessed and understood together with today's labor opportunities and working conditions for farmworkers, and within the broader socioeconomic and immigration context that impacts farmworkers and their families. Acknowledging farmworker rights through fair labor standards and enforcement of occupational, safety and health regulations could translate into better housing for these workers and their families. Investing in improvements in housing access, affordability and quality for workers necessarily needs to be accompanied with improvements in working, economic and social conditions for farmworkers in Michigan.

**Drs. Handal and Iglesias-Rios** developed and implemented the research study, trained and supervised research staff, supervised the data entry, management and quality control processes, led the data analysis and interpretation of findings, and wrote the report.

In close coordination with Dr. Handal, Dr. Iglesias-Rios oversaw the day-to-day management of the project, coordinated the recruitment process, consented the participants, and coordinated the referral of participants to service providers, when necessary.

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*Michigan Farmworker Project*

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Co-developed in 2019 by Dr. Alexis Handal and Dr. Lisbeth Iglesias-Rios, the Michigan Farmworker Project (MFP) is a community-based participatory research project that aims to provide a deeper understanding of the complex working and living conditions of migrant and seasonal farmworkers in the state of Michigan.

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