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Workplace Sexual Harassment Among Farmworkers:
A Mixed-Methods Sequential Exploratory Design

By

KIMBERLY PRADO

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Epidemiology

in the

OFFICE OF GRADUATE STUDIES

of the

UNIVERSITY OF CALIFORNIA

DAVIS

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Committee in Charge

2021

Dedication

This work is dedicated to my parents, Sandra Concepción Prado, and Walter Armando Prado. Their strength, faith, and encouragement have sustained me throughout my life.

Acknowledgments

I am most grateful to my major professor, Dr. Stephen McCurdy, for his patience, encouragement, and constant honest and constructive feedback. He has inspired me to strive to accomplish great things. I am also grateful for Dr. Maria Elena Rivera Heredia and Lizeth Guadalupe Martínez Servín for their collaboration at the Universidad Michoacana de San Nicolas de Hidalgo. Special thanks to the members of my qualifying committee Dr. Diana Cassady, Dr. Fadi Fathallah, Dr. Jeffrey Hoch, Dr. Heejung Bang, and Dr. Kathryn Conlon. They offered their time and expertise in preparation for my study.

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Abstract

This study evaluated workplace sexual harassment (WSH) in agriculture among men and women farmworkers in California, United States, and Michoacán, Mexico. Four focus groups (two in California with 10 men and 10 women and two in Michoacán with 8 men and 5 women) and 197 farmworker surveys (38 men and 59 women in California; 40 men and 60 women in Michoacán) were conducted. Focus group themes related to the experience of, responses to, and farmworkers' recommendations for prevention of WSH. Although men and women faced WSH, women's experiences were more severe and frequent. Although farmworkers tried to resolve WSH on their own, with co-workers, with family, and with leadership, they faced significant barriers that silenced victims and allowed WSH to persist. All farmworkers recommended that management set a good example and enforce consequences for offenders. Survey participants were aged 23-54 years old. Most farmworkers spoke Spanish, and Purhépecha was spoken only in Michoacán. Sixty-eight percent were married, 80% had children, and 47% had less than 7 years of education. Direct inquiry-based (asking 'Have you ever been the victim of or bystander to workplace sexual harassment?') and behavior-based questioning (using explicit examples of workplace sexual harassment behaviors perpetrated against participant or witnessed by participant as bystander) revealed that many men and women farmworkers from California and Michoacán experienced WSH in the previous year. Women farmworkers in California reported equal or greater frequency of WSH experiences than men. Reported WSH experiences between men and women in Michoacán were similar. All farmworkers identified perpetrators at the leadership and coworker level. Respondents shared that the frequency of certain exposures ranged from weekly, monthly, to multiple times a year. Few perpetrators faced consequences. Of 42 direct inquiry-based WSH experiences reported, only one perpetrator was punished, and at least half of all victims lost their jobs. Survey items related to WSH myth acceptance, WSH beliefs, and WSH vignette discomfort revealed that most of Michoacán farmworkers were equally discomforted by WSH scenarios and accepting of WSH myths. California women farmworkers reported more discomfort than California men, but were comparable to men in their WSH myth acceptance. Belief that no one would help victims was significantly greater among women than men, and over 85% of all

farmworkers agreed that “Something must be done to prevent WSH in Agriculture.” Demographic and occupational factor models built using survey data revealed significant positive correlations between speaking an indigenous language and experiencing WSH. Significant negative correlations were found between greater age and experiencing WSH. Younger age and country of work being Mexico were significantly associated with WSH in logistic regression. Younger workers, those who worked in Mexico, and those who predominantly spoke Spanish or Purhépecha were more vulnerable to WSH than their counterparts. These findings offer qualitative and quantitative support that WSH persists, is frequent, and impacts both men and women farmworkers in agriculture. These findings also show certain characteristics can increase the risk of a farmworker experiencing WSH in agriculture. The information gained helps inform educational materials and policy recommendations for the response and prevention of WSH in agriculture. Study findings will support the agricultural community, educators, researchers, and organizations working to prevent and respond to WSH.

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Introduction:

This study - a mixed-methods sequential exploratory design

This dissertation evaluates workplace sexual harassment (WSH) in agriculture among men and women farmworkers in California, United States, and Michoacán, Mexico. Four focus groups (two in California with 10 men and 10 women and two in Michoacán with 8 men and 5 women) and 197 farmworker surveys (38 men and 59 women in California; 40 men and 60 women in Michoacán) were conducted. Survey data is used in logistic regression to build models for estimating the odds of experiencing WSH based on demographic and occupational factors.

Focus groups and surveys were stratified by gender and country. We compared groups to reveal cultural and gender-based differences. These transcultural comparisons in our binational efforts are relevant because Mexico is the country that most frequently sends farmworkers to California and the rest of the United States. Community advisory boards consisting of researchers, farmworker women, farmworker welfare advocates, non-profit representatives, legal entities, industry officers, academics, and community leaders contributed expertise and input for study strategies, materials, and dissemination.

These focus groups, surveys, and models are all part of a mixed-methods sequential exploratory design. Focus groups helped investigate from the participant's perspective. Focus group findings help refine hypotheses, identify the range of responses for survey, yield more insight behind responses, and inform surveys. Surveys offered an investigation from the researcher's point of reference. Surveys collected information on factors related to previous anecdotal findings. Models provided further quantitative data to support previous anecdotal findings.

The survey includes sections on demographics, organizational infrastructure at the workplace, experiences, and myth acceptance. These sections were chosen because demographics (civil status, gender, age, lower wage), organizational infrastructure (workplace tolerance, reporting), experiences (requests for dates, coercion, frequency), and myth acceptance (women's responsibility, normal heterosexual behavior) each represent areas that are believed to contribute to the risk of WSH (Willness,

Steel et al. 2007, Herrera, Pina et al. 2014, Kim, Vásquez et al. 2016, LeMaire, Oswald et al. 2016, Herrera, Herrera et al. 2018).

Chapters

Chapters 1-4 present my work in the order it was conducted. Chapter 1 presents results from focus groups that explored attitudes, beliefs, perspectives, and experiences relevant to WSH among farmworkers. Chapter 2 presents surveys that collected information related to WSH over the previous 12 months. Chapter 3 presents surveys that collected information related to WSH myth acceptance, WSH beliefs, and WSH vignette discomfort. Chapter 4 presents how survey data were used to evaluate the relationships between WSH and demographic and occupational factors. These findings are a comprehensive work that sheds light on farmworkers experiences of WSH in agriculture. Findings offer testimonials, prevalence estimates, and associations between suspected influential factors. The information gained helps inform educational materials and policy recommendations for the response and prevention of WSH in agriculture. The aim of study findings are to help support the agricultural community, educators, researchers, and organizations working to prevent and respond to WSH.

Chapter 1: “It’s wrong because it could be my sister, wife, or mother”: Focus Groups on Workplace Sexual Harassment Among Men and Women Farmworkers

1.1 Introduction

1.1.1 Workplace sexual harassment in the United States and Mexico

Workplace sexual harassment (WSH) of farmworker women is important yet understudied (Quandt 2009). Limited research reveals this occupational hazard (Galarneau 2013, Oertelt-Prigione 2020) is widespread (Quandt, Kinzer et al. 2020). Figure 1 illustrates empirical findings on WSH of women farmworkers in the United States and Mexico.

Men are the major perpetrators and women its major victims (Waugh 2010, Kim, Vásquez et al. 2016). However, perpetrator and victim can be of either gender (Kim, Vásquez et al. 2016). Published studies on the WSH experience of men farmworkers do not exist. Women farmworkers’ risk for WSH is compounded by race, class, and gender in ways that placed them at greater risk than women in other sectors of employment (Waugh 2010). Figure 2 illustrates documented consequences of WSH for the victim, crew, and organization.

1.1.2 Occupational setting, power, and gender inequalities

The hierarchical employment structure in USA and MX agriculture leads to power imbalances (Zúñiga-Elizalde 2008). MX is a neighboring country to the U.S. and the country that most frequently sends farmworkers to California and the rest of the US (Hernandez, Gabbard et al. 2016). *Foremen* typically are Spanish-speaking farmworkers who oversee workers directly. In the absence of a foreman, farmworkers report directly to the supervisor (Murphy, Samples et al. 2015). *Farm labor contractors (FLCs)* serve as intermediary between farmworkers and managers of the agricultural operation. FLCs are the employers of record who select workers, organize *crews*, and oversee tasks. FLCs are more prevalent in USA than in MX, and in California they must register with the local county labor commissioner’s office and abide by obligations such as WSH training. Crews are often comprised of family members (Waugh 2010). *Transporters* bring workers from their community of residence to the agricultural workplace (Arellano Gálvez 2014). Sometimes, the same person functions as FLC, transporter, and

foreman. As in the U.S., the hierarchical structure in Mexican agriculture organizations produces an unequal power relationship between field owner, supervisor, and farmworker.

Power imbalance and social factors lead to gender inequities. Women farmworkers receive fewer work hours, pay, promotions (Hobbs and Cooper 2017) and are more likely to work for a FLC and rely on *transporters* compared to men (Reid and Schenker 2016). The WSH experience of migrant women with precarious immigration status is further compounded by legal violence that permits, if not produces, their marginalization in the workplace (Villegas 2019). Precarious legal status, poverty, limited access to health care, and workplace insecurity increase gender-based disparities (Cohen and Caxaj 2018). Lastly, women in this culturally male-predominant work environment face increased risk of WSH because the environment reinforces traditional patriarchal gender roles (Kabat-Farr and Cortina 2014).

Mexico has a strong patriarchal culture that leads to stricter gender roles than in the U.S. (Hofstede and Hofstede 2005), aggravating gender-based power imbalances in both countries. MX's historic legacy of oppression and colonization in a patriarchal culture is revealed in male bravado and *machismo*, contrasted with women's self-sacrifice and submissiveness (Flores-Ortiz 2004). Indigenous women farmworkers tend to avoid conflict (López-Bautista 2020) in both countries. As a result, strategies among women farmworkers for avoiding WSH include defeminizing with loose-fitting clothing, deepening the voice, adopting masculine behavior, and intentionally misrepresenting oneself as lesbian (Kim, Vásquez et al. 2016). Gender inequities amid power imbalances in agriculture make WSH and other violence possible (Wilson and Thompson 2001, Zúñiga-Elizalde 2008).

1.1.3 Farmworker men and WSH

Little is known about WSH among men (Hunt, Davidson et al. 2010), and no information exists on the WSH among farmworker men. Although major perpetrators, men may also be victims, bystanders, or allies of victims. Not all men harass, and it is critical to involve men in preventive efforts. Increasing Hispanic men farmworkers "buy in" improves their engagement against violence (Nelson, Lewy et al. 2010).

The majority of farmworkers and those in power in the agricultural workplace are men (Andrade-Rubio 2016, Hernandez, Gabbard et al. 2016), increasing the likelihood of harassment of women subordinates (Morgan 2001). Some supervisor men may intercede and reprimand perpetrators (Murphy, Samples et al. 2015); however, many abuse their power and perpetrate WSH (Waugh 2010, Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016). Some men supervisors leave it to victims to resolve WSH incidents (Arellano Gálvez 2014). Some supervisors may also prefer to fire women victims instead of the men perpetrators (Bauer and Ramirez 2010). Supervisors confronted by a victim's husband may also fire both her and her husband (Waugh 2010).

Husbands can be a source of support for their wives (Murphy, Samples et al. 2015), which may protect against WSH (Kim, Vásquez et al. 2016). Yet husbands may also be a source of vulnerability and risk. Some perpetrators threaten to kill an employee's husband to coerce compliance with sexual demands (Bauer and Ramirez 2010). Some husbands may blame their spouses for provoking sexual attention or cause additional problems by violently attacking the perpetrator (Waugh 2010).

1.1.4 This study

We conducted focus groups to study attitudes, perspectives, beliefs, social perceptions of, and experiences related to WSH to address two research gaps. First, we explore WSH among both women and men farmworkers. Second, we compare binational findings in this transcultural approach to improve impact (Valentín, Elena et al. 2005) and understanding of the diverse ways in which sexual harassment manifests itself according to cultural context and to broaden the field of potential preventive approaches (Valentín, Elena et al. 2005).

1.2 Methods

1.2.1 Community-based participatory research (CBPR)

Researchers at the University of California, Davis (UCD) and the Universidad Michoacana de San Nicolás de Hidalgo (UMSNH) collaborated with local stakeholders through community advisory boards (CABs), consistent with principles of CBPR (May and Law 2008). All researchers were fluent in Spanish and English. CAB members in both study locations consisted of farmworker women, community

advocates, academicians, non-profit representatives, attorneys, industry personnel, and community leaders. CABs met in the winter of 2016 and 2017. Researchers met with CABs to develop trust, formulate research questions, strategy, methodology, materials, and address problems prior to submission to our respective Institutional Review Boards (IRB) (Roberts 2013). CABs helped interpret preliminary data and will aid in disseminating findings and materials (Weinger and Lyons 1992, Roberts 2013, Arcury, Wiggins et al. 2017).

1.2.2 Focus group guide

The focus group guide (Table 1) included material adopted from validated instruments (Cortina 2001, Expósito, Herrera et al. 2014) and sought responses to images, vignettes, myths, definition of WSH, perceived prevalence, and recommendations. The 2-hour semi-structured format encouraged participants to express their views and opinions (Brondani, MacEntee et al. 2008). The study was reviewed and approved by the IRBs at UCD and UMSNH.

1.2.3 Participants

We selected a purposeful sample (Palinkas, Horwitz et al. 2015) of participants in Tangancícuaro, Michoacán, Central Valley, and northern California. Participants were farmworkers aged 18 y and older. In MX, some participants spoke Purhépecha, a local Indigenous language. A Purhépecha interpreter from UMSNH facilitated the discussion for these speakers. The final study sample comprised 10 men and 10 women in California and 8 men and five women in MX.

1.2.4 Data collection

Focus groups, held in February and May of 2017, were conducted in Spanish and in private locations not associated with workplaces. We segregated the focus groups by country and gender and used facilitators matching the group's gender, language, and ethnicity to lessen participants' reluctance to share sensitive information in the group setting (Krueger 2014). Informed consent was obtained, and discussions were recorded. Only researchers accessed electronic and paper documents. California participants received a gift card, and Michoacán participants received a suitcase of equivalent value.

1.2.4 Analysis

Audio recordings were transcribed verbatim. Analysis was conducted in Spanish. Spanish analysis of codes, category, and theme development employed standard methods (Vaismoradi, Jones et al. 2016).

Researchers independently reduced data (participant commentary) into topical *codes* (Wolf 2003, Green, Willis et al. 2007). Intercoder disagreements were resolved by review and consensus. Codes were then grouped into *categories* reflecting broad topics and experience (Gray and Densten 1998, Hsieh and Shannon 2005). Finally, categories were organized into overarching *themes* characterizing participant experience (Sandelowski and Barroso 2003, Sandelowski and Barroso 2006, Green, Willis et al. 2007) (Morse 2008). Peer debriefing, independent coding, transparent analysis, and reflexivity enhanced rigor with respect to credibility, transferability, dependability, and confirmability (Connelly 2016).

1.3 Results

We identified three overarching themes—WSH experience, response to WSH, and prevention recommendations—together comprising six categories and 25 codes (Table 2).

1.3.1 Experiencing WSH

1.3.1.1 Testimonies

Women's WSH experiences were severe and frequent. Regardless of age or marital status, women faced sexualized stares, stalking, assault, jokes, and sexual demands from persons at all levels of the employment organization. One California woman described persistent harassment.

“All that man did was follow behind us and look at us and our hips. One woman got mad and asked, ‘And you, mister, why are you following behind us? Why don’t you go stare at the others over there in the other line?’ He said, ‘It’s because you have pretty hips.’” – Woman USA

Farmworker

Although clearly experiencing WSH, women participants called it *morbosidad* (unhealthy and demeaning sexual interest), *vulgaridades* (vulgar language), *falta de respeto* (lack of respect), and *abuso de poder* (abuse of power). California women stated the covering of faces helps girls hide their youth

from predators. Women in Michoacán shared they covered up their bodies to avoid sexualized staring and that the risk of WSH increases when strangers are included in work crews (as opposed to family-based crews).

Compared to women, men experienced moderate and infrequent WSH. Men felt harassed by smiles, laughter, jokes, and conversation from women farmworkers. Men said that some workers ignore the harassment, but others perceived it as an invitation to sexual pursuit. The quote below illustrates misinterpretation of a smile.

“There are men who, with one small smile, begin to move forward and begin to engage... They begin to be closer to the women or something like that. And there are some who don’t even notice [the smile], and nothing more happens at work.” - Man MX Farmworker

One farmworker man said sexual advances were permissible if the woman assented to them by not speaking up.

1.3.1.2 Contributing factors and effects on bystanders

All participants exposed directly or indirectly to WSH said that it bothered them and caused anxiety. All farmworkers believed that WSH was fueled by lack of respect, education, and unchecked power. Michoacán men emphasized women were vulnerable because of lack of education and low literacy. As bystanders, participants were empathetic towards vulnerable victims. Men said that WSH is wrong because the woman victim could be their sister, daughter, or wife. California women said gay victims face strong discrimination, sexual coercion, and rape in MX, and men stated that WSH makes gay workers feel uncomfortable. Neither men nor women farmworkers in Michoacán addressed WSH perpetrated against gay persons.

All groups blamed victims. Michoacán men thought women were harassed because they failed to establish respect for themselves; women who did not report WSH incidents were “complicit” and “permissive.” Most participants agreed with the myth that women must have done something to provoke

WSH. All California participants stated they disagreed with this myth, yet still opined that women instigated WSH.

1.3.2 Responding to WSH

1.3.2.1 *Reacting to WSH*

All participants expected women victims to report WSH. Michoacán men expected women to complain or report to leadership. California men expected women to contact Human Resources (HR) and Occupational Safety and Health Administration (OSHA). Victims were also expected to report to family, quit, and/or confront the perpetrator. Only Michoacán participants openly considered quitting, however, they later said this was actually unfeasible because of limited employment options. Michoacán men believed that victims help spread the word and convince others to leave that field. One Michoacán woman said she scolded her perpetrator. Two California women said they threatened perpetrators with reporting. One California woman who was assaulted said she never went back.

WSH discussions revealed a feeling of defeat and helplessness among all farmworkers. Reasons for this included experiences of reprisal, perceiving WSH as part of the job, a belief that perpetrators will never stop, and leadership's failure to believe reports. For example, a man farm worker shared how victims will never be able to stop perpetrators.

"I don't think that sexual harassment would end if the woman tells the man to stop ... these things would keep happening . . . they are always going to keep happening." Man USA

Farmworker

1.3.2.2 *Barriers to help seeking*

Women faced greater barriers to seeking help than men. Everyone said women victims stay silent because of power imbalances, threats, shame, and job loss. The quote below details barriers to reporting.

"She doesn't want to speak up and say anything because of embarrassment, fear they're going to take her job away, or because she doesn't have documents. It can also be because they threaten you, and the men might say that the boss is going to take away your job, and he's going to send

immigration police for you.” – USA Women farmworker

California men stated they ignore WSH directed at them and forgo reporting because no one would believe them. Women in California mentioned that reporting is often fruitless because HR and leadership cover for themselves.

Reporting or sharing WSH made matters worse. Participants said victims of WSH face shame from family and communities. Michoacán farmworkers said that wives who confide in their husbands run the risk that the husband may blame his wife, suspecting infidelity or sexual attention-seeking. Husbands may also violently attack the perpetrator. For one woman farmworker in USA, confronting her perpetrator who was a supervisor ended the WSH, but she suffered reprisal in the form of reduced work hours.

1.3.3 Farmworker recommendations

1.3.3.1 Preventing WSH

Farmworkers said that some employers are acknowledging WSH, introducing relevant trainings, and farmworkers are showing more respect and willingness to speak up. However, one male farmworker in USA stated that this study’s focus group was the first time he had ever heard of the topic. Farmworkers identified efforts they believe reduced WSH, such as family-based crews, women covering up, gender segregation, explicit rules, and educational talks. All men expressed how rules are fundamental to a good labor environment and that talks on behavioral expectations, boundaries, and WSH education are important for establishing and maintaining good behavior.

1.3.3.2 Workplace changes needed

Farmworkers recommended that employers provide a safer work environment and enforce consequences. All women recommended consistent punishment for offenders and firing repeat offenders. Men also requested that leaders set good examples.

“The boss or the supervisor has to respect the people ... so that then they give the example to the rest of the workers ... so that afterwards everyone doesn’t say ‘If the boss doesn’t respect the work, then why should I? That boss doesn’t respect.’ He should demand total respect for the

people.” – MX Man farmworker

All men described a need for reporting alternatives such as having a company management officer for women and direct reporting to a level above supervisors and FLCs.

Workers emphasized a top-down approach to the issue, with improvements in leadership’s behavior and organizational accountability. All participants requested education and group talks. California women recommended larger fines for employers. All stressed the importance of training at every level of the organization since WSH can arise anywhere on the job. Young men in Michoacán, believed to perpetrate WSH, and recent arrivals in California, with limited knowledge of US laws and cultural norms, were said to need additional guidance.

1.4 Discussion

We report here on attitudes, beliefs, perspectives, and experiences relevant to WSH among men and women farmworkers from focus groups conducted in California, USA, and Michoacán, MX. They offered critical feedback with requests for support, training, leadership’s modeling good behavior, and enforcing consequences, especially for those organizations lacking or not effectively enforcing anti-harassment policies (Waugh 2010). Our results confirm that men may also be victims of WSH, yet their experience differs quantitatively (less frequent) and qualitatively (usually limited to occasional leering glances and comments) from that of women.

Quitting in response to WSH was broached only among Mexican participants. Possible reasons for this difference could include a regulatory regime that does not facilitate reporting (thus leaving few options other than quitting) and sociocultural factors in MX such as conflict avoidance (by leaving objectionable employment) among women (López-Bautista 2020). Farmworkers in MX may also feel less vulnerable than those in the U.S. to adverse impacts related to immigration status. Reduced awareness of avenues for preventing WSH in MX may also contribute to increased quitting in response to WSH (Navarro, Climent et al. 2012).

Our participants blamed victims and supported the myth that women are responsible for harassment (Expósito, Herrera et al. 2014, Andrade-Rubio 2016). Wives feared husbands would blame them. This factors among farmworkers (Arellano Gálvez 2014, Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016) causes social isolation and shame. Such fears and myths enable WSH (Herrera, Pina et al. 2014, del Carmen Herrera, Herrera et al. 2017) by inhibiting reporting and causing victims to withdraw from work (i.e., absenteeism, tardiness, and other unfavorable job behaviors) (Schneider, Swan et al. 1997).

California men identified leadership personnel as major perpetrators. Consistent with previous research, perpetrators included supervisors and coworkers (Waugh 2010, Arcury, Kearney et al. 2015, Murphy, Samples et al. 2015), farmworkers with little education were targets (Arellano Gálvez 2014), and all farmworkers said supervisors threatened victims with violence, job loss, and deportation (Kim, Vásquez et al. 2016). Imbalance of power, poverty, lack of alternative employment, and limited knowledge of one's rights and protections increase vulnerability and facilitate sexual coercion (Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016). Despite supervisors perpetrating WSH, workers still relied on leadership to resolve WSH.

Farmworkers gave recommendations such as covering up and gender segregation. Covering up is a common but imperfect defense (Castañeda and Zavella 2003, Waugh 2010). CAB members opined that covering up and gender segregation reinforce systemic discrimination, noting that men occupy leadership positions in US and MX (Andrade-Rubio 2016, Hobbs and Cooper 2017). Additionally, the expectation that women, but not men, must cover up to protect themselves is itself a form of discrimination and victim blaming. Moreover, it distracts from everyone's responsibility to refrain from WSH and employer's responsibility to prevent WSH.

Findings offer new information and context to previous studies. We demonstrate that WSH, direct or indirect, effects all farmworkers. Though discussed in California, Michoacán participants didn't discuss the WSH of gay workers, perhaps because they may have no experience with it or were reluctant

to discuss the topic in the group setting. We document recommendations direct from farmworkers. Farmworkers mention valuable information on the fear and vulnerability of undocumented immigrants (Waugh 2010). Lastly, terminology and language are critical when querying women about WSH because they did not use standard terms to describe it (Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016). Our findings offer language farmworkers use that can help in assessment of complaints and development of educational materials.

1.5 Conclusion

Addressing myths and gender needs is important. Our participants victim blaming perpetuates WSH (Cowan 2000), whereas debunking myths reduces harassment (Diehl, Glaser et al. 2014). Women are an increasingly important labor source, and their unique risks and needs must be acknowledged (Hobbs and Cooper 2017). Women need two things: 1) reporting alternatives above leadership and 2) a dedicated complaint officer.

More women are needed in management. Our participants want an organization that acknowledges the existence of WSH and responds effectively. This is more likely to occur in organizations where power and management are balanced between men and women. Women are less likely than men to accept “harassment myths” such as believing that women who complain of WSH are overreacting or planning extortion (Lonsway, Cortina et al. 2008, McDonald 2012, Walsh, Bauerle et al. 2013). Manager training, a more hospitable workplace for women, and more women in management are important means for preventing WSH (Dobbin and Kalev 2019).

Promoting positive cultural values offers men a productive role in prevention. Participants condemned WSH as contrary to cultural values. *Caballerosidad* (Arciniega, Anderson et al. 2008) (a code of chivalry in Spanish culture emphasizing responsibility, protection of the vulnerable, and emotional connectedness that contrasts with the hypermasculinity of *machismo*), *respeto* (respect), and *cortesía* (courtesy) (Mardones and Navarro 2017) promote respect for others and protection of vulnerable persons. Trainings could recognize and encourage these constructs to reinforce their values. Behavior change may

occur when it's actively promoted in farmworker men, but it can also be achieved by self-reflection through facilitated discussion (Nelson, Lewy et al. 2010).

Trainings must include bystander education. Traditional trainings can send the simplistic message that men are potential perpetrators rather than allies and may result in backlash (Dobbin and Kalev 2019) and increased harassment (Robb and Doverspike 2001, Kearney, Rochlen et al. 2004). Bystander education can increase Hispanic male participants' willingness to intervene in WSH incidents (Lawson, Munoz-Rojas et al. 2012). Bystander trainings (Katz and Moore 2013, Coker, Fisher et al. 2015, Coker, Bush et al. 2017, Seda 2020) offer all workers a role as allies with victims.

A top-down approach is required. Employers are ultimately responsible for worker safety and must shape the work environment accordingly. In the U.S., federal and state labor law has been the driver for WSH prevention. WSH has appeared over the years as a long-standing fact of life seen as a social problem (Stockdale, Bell et al. 2019) and is now recognized as an occupational hazard (Galarneau 2013, Oertelt-Prigione 2020). Despite California's requirement for WSH prevention training for FLC license renewal, WSH persists. Participants request leadership that believes employees reporting WSH, sets a good example, establishes expectations, enforces consequences, and educates workers.

Policy and government agencies must play a bigger role in WSH prevention. The U.S. Department of Labor (DOL) could provide a stronger regulatory framework through the Occupational Safety and Health Administration (OSHA), which currently does not have workplace standards for WSH. These would require employers to conduct hazard assessments and put preventive programs in place before there is an incident. Non-governmental regulatory programs can also play an important role (Asbed and Hitov 2017) that ensures good labor relations practices, a code of conduct, mechanisms for workers to report WSH, and a monitoring system to assure compliance.

Prevention implications differ by country. Enforcement of existing policy is needed in the U.S., whereas awareness and responsive policy development are needed in MX. Distance to the fields, crop type, and crew composition modify vulnerability and risk in both countries. Transcultural studies show

that gender roles are more patriarchal in MX than in USA (Hofstede and Hofstede 2005), suggesting that women in MX are at greater risk of WSH than women in USA. How these and regulatory differences influence WSH risk and prevention should be a focus in future studies. Research can also evaluate leadership's attitudes, perspectives, beliefs, and experiences related to WSH among farmworkers by country. Additional studies would benefit from the use of surveys and interviews for an in-depth look at this sensitive topic.

Limitations of our study include small sample size, sparse demographic data for participants, and limited geographic scope. We believe the limited demographic data did not impair findings because the nature of focus groups is to identify issues, questions, and perspectives, rather than to generate quantitative estimates. Limited resources restricted sample size and geographic scope, which may limit the depth and generalizability of our findings.

Though we were interested in assessing farmworker's social perceptions of WSH, participants may have still been reluctant to share sensitive information in the focus group setting. Open and honest conversations were facilitated by moderators, drawn from the same demographic groups as the participants, and by the stratification of country and gender. These groups permitted understanding the collective vision of this phenomenon, which would not have been possible with individual interviews. Responses were analyzed in the Spanish language to reduce the loss of cultural nuances. However, the Purhépecha transcripts were translated into Spanish, potentially causing some loss of cultural nuance.

Strengths of this study include its focus on both women and men farmworkers, a CBPR approach, and a transcultural view in its binational comparisons. Including men, a heretofore relatively understudied group, is necessary for fuller understanding of WSH and development of effective preventive policies. A comparison of U.S. and MX experience is important because of the interconnectedness between these agricultural labor economies. Understanding differences and similarities between these two groups helps identify relevant strengths and weaknesses in both settings and informs development of policies and

interventions on the local, national, and international level. Lastly, this study adds to our understanding of an important and understudied problem in a vulnerable and marginalized group.

1.6 Funding and acknowledgments

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We thank the farmworkers and organizations that made this study possible. In Michoacán, these included *La Confederación Nacional Campesina* (the National Women Farmworker Confederation), and *Red Solidaria de Derechos Humanos* (Solidarity Network for Human Rights). In California, these included *Líderes Campesinas* (Farmworker Women Leaders), *Alianza Nacional De Campesinas* (National Farmworkers Womens' Alliance), the Yolo County Housing Authority, Teresa Andrews and Javier Castro with the WCAHS, and Dr. Melissa Gosdin, the Qualitative Research Analyst at the UC Davis Center for Healthcare Policy and Research.

1.7 Tables and figures

1.7.1 Figure 1: WSH of Women Farmworkers in the United States and Mexico

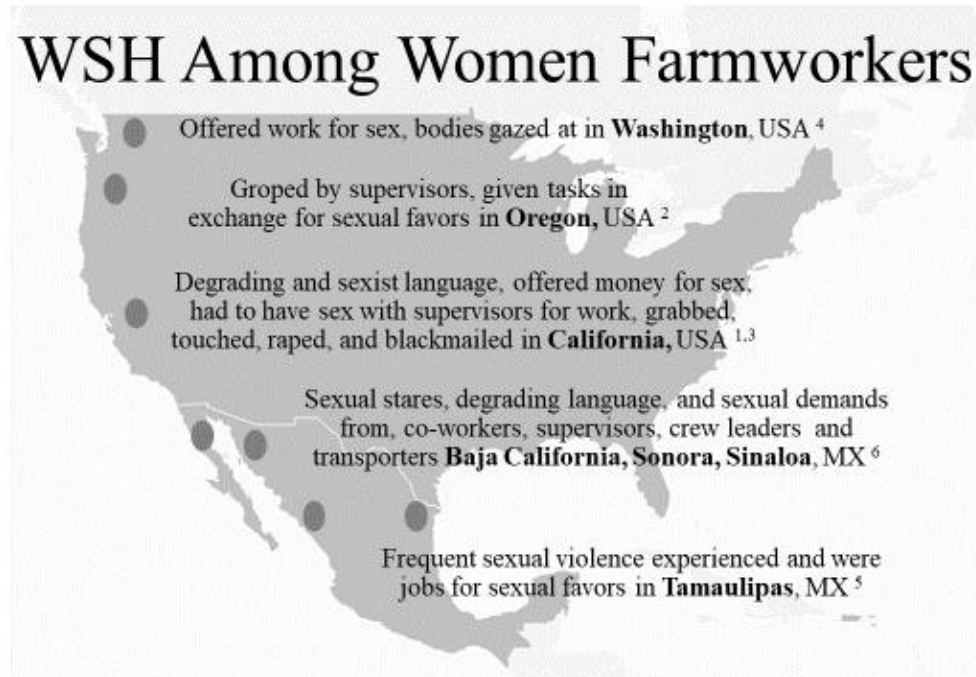


Figure 1: WSH of Women Farmworkers in U.S. and MX. 1(Tamayo 1999) 2(Murphy, Samples et al. 2015) 3(Waugh 2010) 4(Kim, Vásquez et al. 2016) 5(Andrade-Rubio 2016) 6(Arellano Gálvez 2014)

1.7.2 Figure 2: Consequences of WSH for the victim, crew, and organization

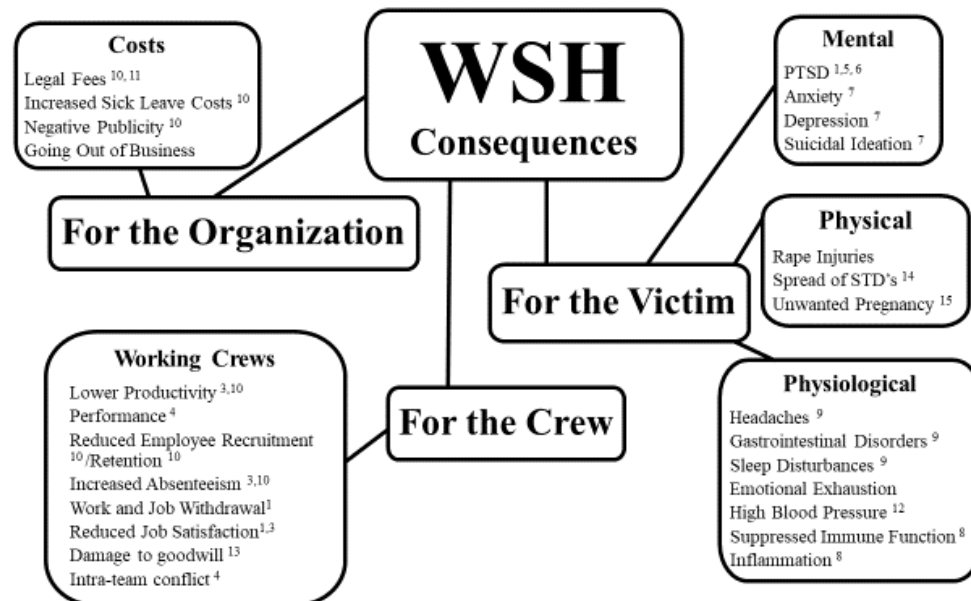






Figure 2: Consequences of WSH for the victim, crew, and organization. 1(Willness et al. 2007; Pina and Gannon 2012) 2(Street et al. 2008; O'Leary-Kelly et al. 2009; Pina and Gannon 2012) 3(Macdonald 2012; Pina and Gannon 2012) 4(Raver and Gelfand 2005) 5(Avina and O'Donohue 2002) 6(Basile, Smith et al. 2015) 7(Kim, Vásquez et al. 2016) 8(Smith 2006) 9(Magley, Hulin et al. 1999, Wasti, Bergman et al. 2000) 10(Lengnick-Hall 1995) 11(Tamayo 2009) 12(Krieger, Waterman et al. 2006, Smith 2006, Willness, Steel et al. 2007, Krieger, Chen et al. 2008) 13(Murphy, Samples et al. 2015) 14(Addison 2014) 15(Cohen and Caxaj 2018)

1.7.1 Table 1: Workplace Sexual Harassment Focus Group Guide

<p>Table 1: Workplace Sexual Harassment Focus Group Guide</p>
<p>(4 items) Images</p> <p>Tell me about what you see and what you think of these images?</p> <div style="display: flex; justify-content: space-around; align-items: center;">     </div>
<p>(7 items) Vignettes</p> <p>What does this make you think of and feel?</p> <p>“... Looking firmly at the new workers’ hips ...”</p> <p>“... Cell phone filming women inappropriately ...”</p> <p>“... Admiringly staring and asking if she has a boyfriend ...”</p> <p>“... Gay worker receives unwanted hugging ...”</p> <p>“... Crew leader gropes worker while training ...”</p> <p>“... Supervisor sexually assaults worker in field truck ...”</p> <p>“... Male co-workers describing women’s bodies during lunch ...”</p>
<p>(5 items) Sexual Harassment Myths</p> <p>What are your thoughts on these statements?</p> <ol style="list-style-type: none"> 1. Sexual harassment is part of working in agriculture. 2. If a woman is sexually harassed, she must have done something to provoke it. 3. It is inevitable that men notice women that they work with in a sexual way. 4. Almost all types of sexual harassment would stop if the women would simply tell the man to stop. 5. Sexual harassment is only when a man bothers a woman.
<p>WSH Definition and Prevalence</p> <p>Have any of you known about any sexual harassment cases in your place of work?</p>
<p>Barriers and Recommendations</p> <p>Why do you think some victims do not speak up?</p> <p>What in the workplace, and from leadership could help with prevention?</p>
<p>*this table displays a shortened version of the focus group guide. Please contact researchers or visit https://aghealth.ucdavis.edu/ to contact department.</p>

1.7.1 Table 2: Codes, categories, and themes from focus groups that explore attitudes, perspectives, beliefs, and experiences regarding workplace sexual harassment (WSH) in agriculture among women and men farmworkers in Michoacán, Mexico and California, United States

		USA		MX	
		Men	Women	Men	Women
Table 2: Codes, categories, and themes from focus groups that explore attitudes, perspectives, beliefs, and experiences regarding workplace sexual harassment (WSH) in agriculture among women and men farmworkers in Michoacán, MX and California, USA.					
Theme 1: Experiencing WSH					
Category 1: Testimonies					
Codes	Unwanted sexual attention	X	X		X
	Sexual assault		X		X
	<i>Quid pro quo</i>		X		X
	Men experiencing WSH	X	X		
Category 2: Contributing factors and effects on bystanders					
Codes	Lack of respect for person and job	X	X	X	X
	Lack of education	X	X	X	
	Misinterpretation of social interactions	X	X	X	
	Victim blaming	X	X	X	X
	Abuse of power	X	X	X	X
	Vulnerable groups		X	X	
Theme 2: Responding to WSH					
Category 3: Reacting to WSH					
Codes	Call on leadership	X	X	X	X
	Sharing what happened	X		X	X
	Confront		X		X
	Leave job		X	X	X
Category 4: Barriers to help seeking					
Codes	Fear, threats of job loss, and deportation	X	X	X	
	Leadership fails to help	X	X		X
	Husband violence or blaming spouse victim			X	X
	Defeat and helplessness	X	X	X	X
Theme 3: Farmworker recommendations					
Category 5: Preventing WSH					
Code	Taking care of oneself/ cover yourself up	X	X	X	X
	Working among family	X		X	X
	Rules and sexual harassment prevention programs	X	X	X	
Category 6: Workplace changes needed					
Codes	Group talks	X	X	X	X
	Leadership setting an example	X	X	X	
	Management enforcing consequences	X	X	X	X
	More reporting options in the workplace	X	X	X	X

Chapter 2: Exposure to Workplace Sexual Harassment Among Women and Men Farmworkers

2.1 Introduction

2.1.1 Workplace sexual harassment exposure

Workplace sexual harassment is a ubiquitous phenomenon across age, race, marital status, and occupation (Gruber and Bjorn 1982, Fitzgerald, Shullman et al. 1988, Ménard, Hall et al. 2003). Perpetrator and victim can be of either sex, but women are at high risk of victimization (Kim, Vásquez et al. 2016, Prado, Rivera Heredia et al. 2020). Approximately 35% to 50% of women are sexually harassed at some point in their working lives (Gutek and Done 2001). In the United States, 50% of all working women (Fitzgerald and Cortina 2018), 40 to 55% of university students and faculty (Richman, Rospenda et al. 1999, Moylan and Wood 2016), and 41 to 60% of women soldiers (Barth, Kimerling et al. 2016, Gurung, Ventuneac et al. 2018) experience WSH. Among working class Latinas, up to 60% report WSH (Cortina 2001).

The agricultural industry differs dramatically from typical middle-class employment, and its social structures help perpetuate WSH (Flores 2018). Accordingly, prevalence of WSH among women farmworkers is higher than in most industries in the United States. Circumstances such as reduced worker protections, field work, warehouse work, wage theft, unpredictable hours, and male dominated crews increase the risk of this kind of exploitation among women agricultural workers. Eighty percent of women farmworkers surveyed in California experienced WSH (Waugh 2010). Despite its ubiquity in the agricultural workplace, consumers are largely oblivious to the suffering endured by farmworkers, and this invisibility perpetuates a cycle of exploitation of those whose labor sustains the food economy (Flores 2018). Lastly, migrant women's experiences of WSH are compounded by legal and cultural factors that further marginalize them in the workplace (Villegas 2019).

2.1.2 WSH by gender and in the United States and Mexico

Focus groups and one survey reveal that WSH against women in agriculture is widespread in the United States (Waugh 2010, Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016, Prado, Rivera Heredia et al. 2020) and Mexico (Arellano Gálvez 2014, Andrade-Rubio 2016, Prado, Rivera Heredia et al. 2020). Farmworkers have noted that “just being female in the fields creates risks” (Castañeda and Zavella 2003). The survey among women farmworkers in California revealed that 97% reported gender harassment (generalized sexist comments and behavior that convey insulting, degrading, and sexist attitudes), 53% reported unwanted sexual attention (attention ranging from unwanted, inappropriate, and offensive physical or verbal sexual advances to gross sexual imposition, assault, or rape), and 24% reported sexual coercion (the solicitation or coercion of sexual activity)

The regulation and illegality of WSH in the United States differs from that in Mexico. For example, United States has declared WSH illegal in all 50 states under the Civil Rights Act of 1964. It was also made illegal under court rulings defining *quid pro quo* and *hostile workplace* in Williams v. Saxbe (1976) and Meritor Savings Bank v. Vinson (1986). The Equal Employment Opportunity Commission (EEOC) is the federal agency responsible for prosecuting WSH in the U.S. In Mexico, WSH was acknowledged in the 1991 federal penal code. It is considered a crime in 16 of 32 Mexico States. It was also made illegal under the 2007 *Ley General de Acceso de las Mujeres a una Vida Libre de Violencia* (The general law of access for women to live a life free of violence). Mexico does not have an EEOC-equivalent regulatory agency to prosecute and prevent WSH. Additionally, women farmworkers in Michoacán face greatly reduced occupational, social, and cultural support. For example, women farmworkers in Mexico may face severe WSH in the workplace, domestic violence in the home, and are often blamed for the WSH perpetrated against them. In many cases women are expected to endure the oppression of men because of the

widespread cultural assumption that men have greater authority and that men are superior (Zúñiga-Elizalde 2008, Arellano Gálvez 2014, Andrade-Rubio 2016, Calvario Parra 2016).

There are few data comparing WSH experiences of men and women in the United States and Mexico, despite the fact that Mexico is the country that most frequently sends farmworkers to California and other regions in the United States (Hernandez, Gabbard et al. 2016). Separate focus groups among men and women farmworkers in California and Michoacán revealed that women experienced more frequent and severe WSH compared to men (Prado, Rivera Heredia et al. 2020). Focus groups in Mexico among women farmworkers describe a strong patriarchal control where men act with a sense of entitlement and express themselves in hypermasculine and violent ways (Andrade-Rubio 2016). Although employers in the United States must abide by laws protecting workers against discrimination based on sex, employers in Mexico operate under a comparatively looser regulatory framework where there is a lack of follow up, supervision, and less enforcement of the law.

2.1.3 This study

We report here the results of a cross-sectional survey to investigate WSH experience among women and men farmworkers in California, United States, and Michoacán, Mexico. Comparing across genders and across countries will broaden the impact of findings. Mexico is the country that most frequently sends farmworkers to California and the rest of the United States (Hernandez and Gabbard 2019). The state of Michoacán ranks third nationally in migrants from Mexico to the United States, and most travel primarily to California and Illinois (Deeb-Sossa 2019); 47.6% of Michoacán migrants are in California (Li, Cardenas et al. 2020). For these reasons, we sampled with the aim of comparing similarities and differences between men and women farmworkers in California and Michoacán. We also offer a transcultural comparison to assess the similarities or diversities occurring in the two different cultures (Valentín, Elena et al. 2005). Our aim is to inform

and support the agricultural community, educators, researchers, and organizations working to prevent and respond to WSH.

2.2 Methods

2.2.1 Participants

Bilingual (English and Spanish or Spanish and Purhépecha) researchers and community members assisted in recruiting farmworkers from agricultural communities in Michoacán (40 men and 60 women) and California (38 men and 59 women). The Michoacán farmworkers spoke Spanish or Purhépecha, an indigenous language spoken by the Purhépecha people centered in the northwest region of Michoacán, Mexico. Participants were eligible to participate if they were at least 18 years old, were currently employed in agriculture, and had worked for at least the past year in agriculture.

2.2.2 Community advisory board

Study teams in Michoacán and California each convened local Community Advisory Boards (CAB; *Mesa Consultiva*). These included farmworkers, farmworker welfare advocates, non-profit representatives, legal entities, academics, industry officers, and community leaders. CAB members assisted in development of study strategies, materials, and plans for dissemination.

2.2.3 Sampling sites

We conducted a purposeful sample in California, United States, and Michoacán, Mexico. Researchers engaged with local community leaders and traveled to farmworker communities to recruit participants in their homes. Farmworkers in California were recruited with the help of local farmworkers coalitions and Migrant Housing Centers. Farmworkers in Michoacán were recruited with the help of local community leaders.

2.2.4 Survey development

Focus group results (Prado, Rivera Heredia et al. 2020), pilot work, and CAB input informed survey development. Previous focus group results had revealed novel anecdotal evidence of men

farmworkers being sexually harassed and women farmworkers perpetrating WSH (Prado, Rivera Heredia et al. 2020). To document such novel mixed gender perpetration of WSH in our quantitative efforts, we included items that collected information on WSH with different gender combinations of person A targeting person B (men on men, men on women, women on women, and women on men WSH perpetration). Following CAB review, we partnered with a local farmworker health clinic to pilot the survey with four women and two men farmworkers.

2.2.5 Data collection

Farmworker survey recruitment efforts began in June and July of 2017. California ended recruitment in October 2017, and Michoacán in February 2018. We used convenience and purposeful sampling (Valerio, Rodriguez et al. 2016). In California, participants were reached through door-to-door canvassing, flyers, and visits in popular areas such as laundromats, worship centers, and the administrative office at a Migrant Housing Center in northern California. We left flyers with a phone number for participants to call and set up individual appointments to provide informed consent and complete the interviewer-administered survey in a private room away from employers and co-workers. Interviews in Michoacán were conducted in participants' homes to avoid interaction with co-workers or employers. Most interviews were conducted in Spanish by our research interviewer, and a translator was used for Purhépecha speakers. All interviews were conducted in Spanish and lasted approximately one hour. CABs helped researchers choose participant incentives that were appropriate to their locale. California participants received a \$50 gift card at a local department store, and Michoacán participants received a luggage bag worth \$25. All study activities were approved by the Institutional Review Board at the University of California Davis (UCD IRB#946036-6).

2.2.6 Demographic, occupational characteristics, and work infrastructure

We collected demographic (age, schooling, birthplace, preferred language, and other related

variables) and occupational characteristics (job description and tasks, piecework vs. hourly payment, presence of family members in the work crew). Questions on workplace infrastructure explored whether participants could identify a supervisor or management officer for reporting incidents of WSH. Workplace infrastructure questions also related to reporting WSH, if a solution to WSH was presented, if retaliation had occurred, and if the perpetrator had been punished.

2.2.7 Sexual harassment experiences

We used two methods to collect information on WSH. The first method included direct-inquiry-based items (asking ‘Have you ever been the victim of or bystander to workplace sexual harassment?’ and answering ‘Yes/No’) and the second was behavior-based items (using explicit examples of workplace sexual harassment behaviors perpetrated against participant or witnessed by participant as bystander and answering ‘never, sometimes, frequently, very frequently, and always’) (Cortina 2001, Chan, Chow et al. 2008). Extensive research (Fitzgerald, Gelfand et al. 1995) documents psychological dimensions or ‘types’ of sexual harassment. Behavior-based items were adapted from the psychometrically rigorous Spanish SEQ-L (Sexual Experience Questionnaire-Latina), a validated instrument for measuring sexual harassment among Latinas (Cortina 2001). The SEQ-L addressed three distinct types of sexual harassment that we used in our survey: *sexual hostility* (behaviors involving sexually offensive remarks and comments), *unwanted sexual attention* (e.g., ogling, touching, requests for dates), and *sexist hostility* (misogynist comments without sexual content).

We created a fourth type of WSH behavior-based survey item section to capture items that describe *quid pro quo* (coercion, offer of favorable work conditions in return for sexual favors). This type of WSH was informed by our CAB members, farmworkers in our focus groups, previous literature describing these experiences among farmworker women (Waugh 2010), and adaptations from validated surveys (Fitzgerald and Hesson-McInnis 1989, Fitzgerald, Gelfand et al. 1995,

Stark, Chernyshenko et al. 2002). Response options for *quid pro quo* behavior-based WSH survey items were kept the same as our other behavior-based survey item WSH types.

Our survey aim was to document both direct and indirect WSH. Indirect WSH incidents included experiences where the study participant witnessed, was close enough to hear and see, but was not involved in, i.e., was a bystander. Direct WSH incidents were those where the study participant was targeted. Items were formatted to record both (Figure 1a and 1b). Our study does not provide information for only direct or only indirect WSH because we aimed to study WSH experiences of both direct and indirect exposures. Each has a negative impact and demonstrates the realities of WSH in crews (Prado, Rivera Heredia et al. 2020).

Our four WSH dimension types for behavior-based WSH survey items were labeled under four WSH types: *gender discrimination* (GD; characterized by sexist hostility), *hostile sexual behavior* (HB), *unwanted sexual attention* (USA), and *quid pro quo* (QPQ). Each type had at least three behavior-based items. We asked participants to report experience based on a five-point frequency scale consisting of never (0 times), sometimes (1-3 times per year), frequently (4-6 times per year), very frequently (1-2 times per month), and always (1-2 times per week). Responses were later dichotomized (occurred vs. never occurred) for logistic regression and 95% confidence interval analysis. Participants also indicated the perpetrator's job position as co-worker, contractor, transporter, crew leader, supervisor, or field owner. A summary leader variable was created by combining leadership positions (contractor, transporter, crew leader, supervisor, or field owner) into a single category of positions with authority. Participants were given the choice to decline to answer. Declined answers were considered missing values.

2.2.8 Survey reliability

Items under all WSH types were tested for internal consistency and reliability using principal component analysis and calculating Cronbach's alpha (α). Instrument subscales included men in

Michoacán, women in Michoacán, total population in Michoacán, men in California, women in California, and total population in California. Responses were analyzed according to a five-point Likert scale. Final coefficient alphas for the subscales and the total 197 participants all measured above 0.7 (Figure 1a and Figure 1b). These results helped confirm that SEQ-L items previously validated among women farmworkers also worked well among men farmworkers in California and farmworkers in Michoacán. This also helped us ensure that QPQ items were consistent.

2.2.9 Analysis

2.2.9.1 *Descriptive analysis*

Frequencies were calculated to characterize demographics, occupational characteristics, workplace infrastructure, WSH experiences, frequency, perpetrator type, and mixed-gender WSH. We stratified measures by country and gender.

2.2.9.2 *Statistical analysis*

Summary statistics, chi-squared, and Fisher's exact tests were calculated for workplace infrastructure, and WSH experiences. Summary statistics and Kruskal-Wallis testing was conducted on WSH frequencies. Statistical testing was conducted in SAS 9.4 (Cary, NC, 2016). These were all evaluated against country and gender. An $\alpha < .05$ was considered statistically significant. Odds ratios included 95% confidence intervals. Preliminary results were presented to CAB members for review and comment.

2.3 Results

2.3.1 Demographics, occupational characteristics, and workplace infrastructure

Demographic variables for farmworkers were generally similar across country and gender (Table 1). Most participants in California and Michoacán were born in Mexico. California men were on average approximately a decade older than California women and men and women in Michoacán. California participants had the highest levels of education, especially women, of whom over half completed at least 12 years of education. Men were more likely to be married than women in both California and Michoacán. Women farmworkers in Michoacán were the only group in which the majority was not married. Most farmworkers spoke Spanish, and Purhépecha was spoken only in Michoacán (14 men and 3 women).

Occupational characteristic variables for farmworkers differed by country and gender (Table 2). About the same proportion of farmworkers in Michoacán and California moved with crops to find employment. However, farmworkers in California more commonly reported working seasonally than did Michoacán participants. Most farmworkers in California reported payment by the hour,

whereas most Michoacán farmworkers reported payment by the day, crate, or week. Most farmworkers in Michoacán worked among family, and about half did so in California.

2.3.2 Workplace infrastructure for sexual harassment with direct-inquiry-based survey items

Workplace infrastructure differed by country and gender (Table 3). Most farmworkers knew of someone at work who could receive WSH reports. Being the target or witness of a WSH incident (Table 3) was more common in the U.S. (49% of women, 21% of men) than in Michoacán (7% of women, 13% of men). WSH was reported to leadership in 50% of the specific reported incidents in California across genders, compared to 20% of Michoacán incidents across genders. California incidents were reportedly resolved more frequently than those in Michoacán. No perpetrator was punished in California, and only one male farmworker in Michoacán reported the perpetrator being punished. Retaliation against the victim was present in over 90% of incidents reported in California and at least 50% of incidents reported in Michoacán. The victim quit their job in over 80% of incidents reported in California and approximately 50% of incidents reported in Michoacán.

2.3.3 Sexual harassment experiences by country and gender with behavior-based survey items

WSH experience variables for farmworkers were stratified by country and gender (Table 4). The WSH types in our survey include *gender discrimination* (GD), *hostile behavior* (HB), *unwanted sexual attention* (USA), and *quid pro quo* (QPQ). All four WSH types were experienced (Table 4). California women farmworkers reported the lowest exposure for *quid pro quo* (7%) and highest for *unwanted sexual attention* (53%). California men's experiences were lowest for *quid pro quo* (3%) and highest for *hostile behavior* (45%). Michoacán women's reported exposure proportion was lowest for *quid pro quo* (10%) and highest for *hostile behavior* (67%). Michoacán men's experiences were lowest for *quid pro quo* at (5%) and highest for *gender discrimination* at (68%). The proportion of farmworkers experiencing two or more of the WSH types were 53% of men and 57% of women in California and 80% men and 67% of women in Michoacán.

Few significant differences were found between men and women. Michoacán women experienced significantly less harassment under the second *gender discrimination* item (GD2 “Someone in your job makes crude and sexual jokes, stories, or comments that describe women negatively”) compared to Michoacán men ($p=0.02$). California women farmworkers experienced significantly more harassment under the first *unwanted sexual attention* item (USA1 “Someone at your workplace tries to talk to other workers about their sex life or sexual preferences, making those people uncomfortable”) than men ($p=0.01$).

Women were more likely than men to report WSH in California (10 of 13 behavior-based WSH survey items). In contrast, women farmworkers in Mexico were more likely than men to report WSH for only four of 13 behavior-based WSH survey items. WSH experience was greater in Mexico compared to California for men (all behavior-based WSH survey items) and for women (11 of 13 behavior-based WSH survey items) (Table 4).

2.3.4 Behavior-based survey item Sexual harassment experience frequencies

Though many behavior-based WSH survey items occurred ‘never,’ farmworkers also reported these items occurring as frequently as ‘always’ (1-2 times a week), ‘very frequently’ (1-2 times a month), ‘frequently’ (4-6 times a year), and ‘sometimes’ (1-3 times a year). The type of WSH that was experienced at an ‘always’ (1-2 times a week) frequency was *gender-discrimination* among both men and women in California and Michoacán. One other WSH type that occurred ‘always’ was *quid pro quo* for men in Michoacán. The types of WSH that occurred ‘very frequently’ (1-2 times a month) were *gender-discrimination*, *hostile behavior*, and *unwanted sexual attention* among men and women in California and Michoacán. One other WSH type that occurred ‘very frequently’ was *quid pro quo* among women farmworkers in California and Michoacán. The type of WSH that occurred ‘frequently’ (4-6 times a year) was *gender-discrimination*, *hostile behavior*, and *unwanted sexual attention* among men and women in California and Michoacán. Only *quid*

pro quo occurred ‘frequently’ among men and women in Michoacán and women in California. The types of WSH that occurred ‘sometimes’ (1-3 times a year) were *gender discrimination*, *hostile behavior*, *unwanted sexual attention*, and *quid pro quo* among men and women farmworkers in California and Michoacán. We did not detect statistically significant differences in WSH frequency between genders within country with our Kruskal-Wallis testing.

2.3.5 Behavior-based survey item perpetrators of sexual harassment experiences

Many farmworkers did not indicate the work role or position (e.g., co-worker, supervisor) of perpetrators (Figure 4). These missing values were greatest for *quid pro quo* WSH. Though sparse summaries, findings reveal WSH is perpetrated by both co-workers and leadership.

Co-workers were more frequently responsible for WSH than leaders for *gender discrimination* (49-93% vs. 15-31%), *hostile behavior* (51-75% vs. 0-16%), and *unwanted sexual attention* (43-87% vs. 0-27%). Only for *quid pro quo* were leaders more frequently perpetrators than co-workers. *Quid pro quo* questions were only answered by California participants.

2.3.6 Mixed gender sexual harassment experiences among all farmworkers

Combinations of perpetrator-target included men targeting women, women targeting women, men targeting men, and women targeting men (Figure 5). Men targeting women was the most frequent, and women targeting men the least frequent. Twenty-one percent of all men in California, 41% of all women in California, 35% of all men in Michoacán, and 34% of all women in Michoacán reported experiencing or witnessing men targeting women.

2.4 Discussion

We surveyed farmworkers in a cross-sectional study to investigate workplace sexual harassment (WSH) among 197 women and men farmworkers in California, United States, and Michoacán, Mexico. Demographic, occupational characteristics, and workplace infrastructure findings offer valuable information. Workers in California were slightly older, had greater education, were more likely to be paid by the hour, earned higher wages, and reported slightly higher availability of

supervisor help than workers in Michoacán. WSH experiences revealed important differences and similarities between men and women farmworkers in California and Michoacán. For example, more California victims faced retaliation than victims in Michoacán. However, behavior-based questioning revealed slightly higher levels of *quid pro quo* sexual harassment in Michoacán than in California. Direct inquiry-based (asking ‘Have you ever been the victim of or bystander to workplace sexual harassment?’) WSH among women (49%) and men (21%) in California and women (7%) and men (13%) in Michoacán and behavior-based WSH accounts (using explicit examples of workplace sexual harassment behaviors perpetrated against participant or witnessed by participant as bystander) among women (as high as 53%) and men (as high as 45%) in California and women (as high as 65%) and men (as high as 68%) in Michoacán document WSH exposure in the previous year. The frequency of experiences and perpetrators in behavior-based WSH survey items reveal that this is a common problem that involves coworkers and leadership positions.

Demographics characteristics of California participants were similar to the United States National Agricultural Workers Survey (Hernandez and Gabbard 2019). Farmworkers in Mexico had comparatively lower levels of education, were younger, and spoke Purhépecha, an indigenous language. Most farmworkers were married, had children, and worked among family. This civil status and family crew composition may influence workers to maintain group harmony. These dynamics can be for good (encouraging workers to look out for one another, defending each other when one is attacked, supporting each other when they want to report) and ill (keeping victims silent because the harasser is a family member or because of the fear that reporting may lead to the entire family facing retaliation through firing, social stigma, or public shaming).

Farmworkers spoke English, Spanish, and Purhépecha. Studies have shown that indigenous

women farmworkers are often unable to access or understand WSH prevention trainings because they aren't available in their language (Murphy, Samples et al. 2015). Our findings support efforts to partner with indigenous community groups and advocates to help translate training tools in audiovisual forms so that workers can understand and access the materials on WSH prevention.

California participants reported being the target of or witness to greater WSH than Michoacán participants based in direct inquiry. This could be due to California farmworkers greater exposure to trainings and assimilation in comparison to Michoacán workers that allow them to identify WSH and label it. Michoacán men also more frequently reported being the target of or witness to WSH than Michoacán women based in direct inquiry. The opposite was seen in California. More California women reported being the target of or witness to WSH than California men based in direct inquiry. The reason for women reporting greater WSH than men in direct-inquiry in the United States may be because women who migrate end up participating in positions beyond domestic roles such as in the workforce (Cervantes-Pacheco, Rivera-Heredia et al. 2011). Greater participation in the workforce offers more legal protections which may explain the higher levels of WSH experiences among California women compared to California men and higher levels of WSH experiences among Michoacán women compared to Michoacán men based in direct-inquiry.

Michoacán farmworkers reported being the target or witness to WSH more frequently than California participants in behavior-based survey items. This could be due to how the items were structured. For example, in behavior-based survey items, farmworkers are not required to label their WSH as such; rather, they report if a behavior occurred that validated surveys have classified as WSH. It is important to ask behavior-based WSH survey items because some victims do not label their experiences as WSH and their experiences go undetected (Shupe 2019). Our findings from behavior-based WSH survey items may reflect the true higher occurrence of WSH among

farmworkers in Michoacán compared to farmworkers in California. Both direct-inquiry and behavior-based survey item techniques are used to measure or record WSH prevalence here and in other studies because behavior-based surveys pose some concerns in the generalizability of findings; thus, it is important to include both direct-inquiry and behavior-based measures of WSH (Willness, Steel et al. 2007).

Only half of farmworkers reported WSH in direct-inquiry questioning, and all but one perpetrator went unpunished. Farmworkers have stated that operators must improve on enforcing policies and assuring consequences (Prado, Rivera Heredia et al. 2020). Researchers have also argued that sexual harassment should be addressed by the organization as a whole, rather than simply focusing on improving employees' skills for dealing with harassment (Fitzgerald and Shullman 1993). These findings suggest that some agricultural organizations must address how to follow through with assuring consequences for offenders from the policy and leadership levels.

Workplace sexual harassment experiences across country differed. Michoacán participants reported greater exposure to WSH than California participants. *Gender discrimination, unwanted sexual attention, and hostile behaviors* were more prevalent than *quid pro quo* in both California and Michoacán. These are unique findings because other reports emphasize the *quid pro quo* harassment against women farmworkers (Waugh 2010, Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016). Stratifying by gender revealed that men and women in California and Michoacán experienced WSH. Both men and women reported WSH experience as target or witness. Recent research has shown that WSH can equally negatively impact both men and women farmworkers (Prado, Rivera Heredia et al. 2020).

Victims said they faced WSH annually, monthly, and sometimes even weekly. Michoacán and California farmworkers experienced similar frequency levels of *gender discrimination* and *hostile*

behavior. California farmworkers reported more frequent *unwanted sexual attention* harassment than Michoacán farmworkers. This difference may have been a result of how farmworkers in the United States receive training that can make them more informed on the illegality of WSH and thus more likely to report it (Murphy, Samples et al. 2015). Michoacán farmworkers reported more frequent *quid pro quo* WSH than California farmworkers. These findings may be driven by the lack of human rights awareness, WSH education, and worker exploitation in Mexico (Andrade-Rubio 2016).

Farmworkers reported exposure to all gender combinations of WSH perpetration where both men and women were harassers and victims. The combination of men targeting women and women targeting women were the most frequent gender combinations reported. These findings offer evidence that men can be victims and women can be perpetrators. However, they also confirm prior research showing that farmworker women are disproportionately victimized and that men are the major perpetrators (Waugh 2010, Arellano Gálvez 2014, Murphy, Samples et al. 2015, Andrade-Rubio 2016, Kim, Vásquez et al. 2016). Our previous work with farmworker focus groups utilized vignettes illustrating mixed gender combinations promoted discussion about discrimination and severe harassment against lesbian and gay workers in agriculture (Villegas 2019, Prado, Rivera Heredia et al. 2020). Further research is needed to examine the kinds of WSH that LGBTQ (lesbian, gay, bisexual, transgender, and queer) workers face and their unique vulnerabilities.

We confirm that WSH perpetrator include coworkers and leadership positions of authority (Waugh 2010). More coworkers than leaders were identified in perpetrating *gender discrimination*, *hostile behavior*, and *unwanted sexual attention*. Some farmworkers did not identify the position of some perpetrators. This may reflect not knowing the perpetrators position or fear of retaliation.

None of the Michoacán participants wanted to indicate the work role or position of the perpetrators of their *quid pro quo* experiences. Unwillingness to provide information about perpetrators among women farmworkers in Michoacán may be due to reduced occupational, social, and cultural support. For example, women may face severe WSH in the workplace and in the home and receive blame for the WSH perpetrated against them. Women are often expected to endure the oppression of men because of the assumption that men have higher authority and are superior (Zúñiga-Elizalde 2008, Arellano Gálvez 2014, Andrade-Rubio 2016, Calvario Parra 2016).

2.5 Conclusion

Women and men farmworkers in Mexico and the United States were exposed to multiple kinds of WSH. These experiences occurred frequently. Perpetrators were found at the coworker and leadership level. Few perpetrators were punished, whereas victims often reported retaliation and having to leave their jobs.

Farmworkers are essential, yet vulnerable to exploitation in the agricultural industry. This work lifts their voices on the violence perpetrated against them. Though women farmworkers are the fastest growing group in agricultural labor, they are the primary victims of sexual harassment and are multiply marginalized based in race, class, and sex. Agricultural crews often contain many members of the same community or family. Both men and women in families can be directly affected as victims or as bystanders. Lastly, retaliation in response to reporting can include the firing of not just the victim, but the victim's family, further silencing victims.

Future research should introduce new and expanded ways of thinking about this problem. Other studies could contribute information on the psychological impact of victim's experiences and help clarify how men and women differ as both direct victims and as bystanders. This supports efforts to garner more participation from men in roles other than as perpetrators (Prado, Rivera Heredia et al. 2020). Other studies could contribute information on the employer or leadership's

experiences, perspectives, and beliefs regarding WSH. This would provide insight from higher levels of the organization, including those with responsibility for working conditions. Employers may face challenges or social barriers to communicating policy, reprimanding offenders, and assisting victims. Understanding experience and attitudes at the leadership level is critical because it is at this level that policy is made, executed, and monitored. And lastly, other studies could contribute information on the LGBTQ+ farmworkers experiences of WSH. The discrimination that members of this group face has yet to be fully evaluated or understood.

Study strengths include the use of our community advisory boards (CAB), inclusion of both men and women farmworkers, our binational comparison, and our WSH measurement approach. CABs consisted of farmworker women, farmworker welfare advocates, non-profit representatives, legal entities, industry officers, and community leaders. CABs contributed to the study strategies, materials, and dissemination. To our knowledge our findings are the second to use surveys in the evaluation of WSH in agriculture and the first to include both men and women farmworkers. We provide quantitative data that support earlier qualitative findings (Murphy, Samples et al. 2015, Andrade-Rubio 2016, Kim, Vásquez et al. 2016). In particular, our comparison of California and Michoacán offer a binational view. Evaluating findings in two countries facilitates comparing across cultures. And this transcultural analysis approach broadens the impact of findings on prevention efforts in Mexico and the United States (Valentín, Elena et al. 2005). These comparisons are relevant because Mexico is the country that most frequently sends farmworkers to California and other regions within the United States. Lastly, we used both direct-inquiry and behavior-based survey items to measure WSH, an approach that is considered appropriate in collecting the full range of participants WSH experiences (Willness, Steel et al. 2007).

Limitations include potential biases from our sampling method, participant self-selection, and

limited geographic scope. Our sampling method consisted of in-person purposeful and convenience recruitment, which could have led to an overrepresentation of a specific response type. Although our sample was similar to the general population of farmworkers shown in national and regional surveys (Hernandez and Gabbard 2019), small demographic differences such as older men in California and more unmarried women in Michoacán may have introduced variation in our sample. Our limited funds kept us from sampling beyond our number of participants, which restricted our geographic scope. However, there was notable diversity in the representation of experiences because we included 1) Spanish and Purhépecha speakers, 2) men and women 3), and residents in Mexico and the United States. Additionally, inferences from p-values may have been impacted because we did not correct for multiple comparisons. These results help continue to raise awareness and lift farmworkers voices. These findings will help aid the development of educational materials. And lastly, the experiences of farmworkers help propose changes in policy recommendations for the prevention of WSH in agriculture.

2.6 Funding and acknowledgments

We thank the farmworkers and organizations that made this study possible. In México, these included *La Confederación Nacional Campesina* (the National Women Farmworker Confederation), *Red Solidaria de Derechos Humanos* (Solidarity Network for Human Rights), and faculty in the department of Psychology at UMSNH. In the United States, these included *Líderes Campesinas* (Farmworker Women Leaders), *Alianza Nacional de Campesinas* (National Farmworkers Womens' Alliance), the Yolo County Housing Authority, and the Western Center for Agricultural Health and Safety (WCAHS). Special thanks to Lizeth Guadalupe Martínez Servín from UMSNH and Javier Castro from the WCAHS as survey facilitators. This research was funded partly by PIMSA (*Programa de Investigación en Migración y Salud*-The Migration and Health Research Program), the Western Center for Agricultural Health and Safety at the University of

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2.7 Tables and figures

2.7.1 Figure 1a: Workplace sexual harassment types and their behavior-based survey items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Figure 1a: Workplace sexual harassment types and their behavior-based survey items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico		
Type	Item	Behavior-based inquiry
Gender Discrimination <i>*α = 0.835</i>	GD1	Someone at your workplace makes comments that insult women, for example, saying: “Women do not make good supervisors” or something similar.
	GD2	Someone in your job makes crude and sexual jokes, stories, or comments that describe women negatively.
	GD3	Someone at your workplace says words to insult women, for example, saying that they are “easy.”
Hostile Behavior <i>*α = 0.867</i>	HB1	Someone at your workplace makes crude and sexual comments in front of other people.
	HB2	Someone at your workplace says offensive things to another person relating to their body or sex life.
	HB3	Someone at your workplace tries to make someone else speak about sexual things.
Unwanted Sexual Attention <i>*α = 0.740</i>	USA1	Someone at your workplace tries to talk to other workers about their sex life or sexual preferences, making those people uncomfortable.
	USA2	Someone at your workplace insists on having a sexual or romantic relationship with another worker even though that worker has told them that they didn’t want to.
	USA3	Someone at your workplace looks slowly at the body of another worker in a way that makes them feel uncomfortable or dirty.
	USA4	Someone at your workplace yells catcalls and whistles at another worker in front of other people in a way that makes them feel uncomfortable.
Please contact kyprado@ucdavis.edu for a copy of the survey format used in data collection. <i>*Cronbach α for total population provided.</i>		

2.7.2 Figure 1b: Workplace sexual harassment type quid pro quo and its behavior-based survey items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Figure 1b: Workplace sexual harassment type quid pro quo and its behavior-based survey items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico		
Type	Item	Behavior-based inquiry
Quid Pro Quo * $\alpha = 0.886$	QPQ1	Someone at your workplace has been offered better working conditions or a promotion in exchange for sexual favors.
	QPQ2	Someone at your workplace has been threatened or punished for not having accepted sexual advances.
	QPQ3	Someone at your workplace has suffered negative consequences for not having agreed to participate in sexual conduct.
Please contact kyprado@ucdavis.edu for a copy of the survey format used in data collection. *Cronbach α for total population provided.		

2.7.3 Table 1: Selected demographic characteristics of 197 Hispanic farmworkers evaluated for workplace sexual harassment in California, United States, and Michoacán, Mexico

Table 1: Selected demographic characteristics of 197 Hispanic farmworkers evaluated for workplace sexual harassment in California, United States, and Michoacán, Mexico				
Characteristics	UNITED STATES		MEXICO	
	California		Michoacán	
	Women	Men	Women	Men
	(n=59)	(n=38)	(n=60)	(n=40)
	n (%)	n (%)	n (%)	n (%)
Country of birth				
Mexico	47 (80)	33 (87)	58 (97)	40 (100)
United States	12 (20)	5 (13)	2 (3)	0 (0)
Age [y]				
Median	34	42.5	30.5	31.5
IQR	27-53	32-54	24-44	23.5-41
Education				
0-3 y	7 (12)	4 (11)	8 (13)	9 (23)
4-7 y	10 (17)	15 (39)	21 (35)	16 (40)
8-11 y	11 (19)	6 (16)	28 (47)	13 (33)
12 y, Trade, College	31 (53)	13 (34)	3 (5)	1 (3)
Have children				
≥1	46 (78)	34 (89)	49 (82)	30 (75)
Civil status				
Married	46 (78)	36 (95)	21 (35)	31 (78)
Single	12 (20)	1 (3)	17 (28)	5 (13)
Living with your partner	1 (2)	0 (0)	20 (33)	3 (8)
Widow	0 (0)	1 (3)	1 (2)	1 (3)
Primary Language				
Spanish	58 (98)	37 (97)	57 (95)	26 (65)
English	1 (2)	0 (0)	0 (0)	0 (0)
Purhépecha	0 (0)	0 (0)	3 (5)	14 (35)

2.7.4 Table 2: Selected occupational characteristics among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Table 2: Selected occupational characteristics among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico				
	UNITED STATES		MEXICO	
	Women (n=59)	Men (n=38)	Women (n=60)	Men (n=40)
Occupational characteristics	n (%)	n (%)	n (%)	n (%)
Movement follows crops	38 (64)*	14 (37)	41 (68)*	29 (73)
Seasonal work (not year-round)	57 (97)*	38 (100)	18 (30)*	12 (30)
Payment scheme				
Contract	1 (2)	1 (3)	6 (10)	1 (3)
Hour	58 (98)*	37 (97)	1 (2)	0 (0)
Piece	0 (0)	0 (0)	2 (3)	1 (3)
Other: Day, Crate, Week	0 (0)	0 (0)	51 (85)*	38 (95)
Work among family	34 (58)*	17 (45)	49 (82)*	30 (75)
*Women significantly different from men within the same country (p < 0.05)				

2.7.5 Table 3: Selected workplace infrastructure characteristics related to sexual harassment among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Table 3: Selected workplace infrastructure characteristics related to sexual harassment among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico				
A - Workplace infrastructure characteristics among 197 farmworkers				
Characteristic	UNITED STATES (n=97)		MEXICO (n=100)	
	Women (n=59)	Men (n=38)	Women (n=60)	Men (n=40)
	n (%)	n (%)	n (%)	n (%)
Existence of designated individual to receive WSH reports	41 (69)*	37 (97)	54 (90)*	28 (70)
Supervisors help available	40 (68)*	34 (89)	38 (63)*	15 (38)
No help available	3 (5)	0 (0)	4 (7)	8 (20)
Comfortable seeking supervisor	31 (53)*	37 (97)	50 (83)	31 (78)
Not comfortable seeking help	9 (15)	1 (3)	1 (2)	1 (3)
Witness to or subject of incident (Direct exposure to WSH)	29 (49)*	8 (21)	4 (7)	5 (13)
B - Workplace infrastructure characteristics among 46 of the 197 sampled farmworkers reporting incidents of WSH in direct questioning				
Characteristic	UNITED STATES (n=37)		MEXICO (n=9)	
	Women (n=29)	Men (n=8)	Women (n=4)	Men (n=5)
	n (%)	n (%)	n (%)	n (%)
The victim reported incident	16 (55)	4 (50)	1 (25)	1 (20)
Solution was offered	19 (66)	4 (50)	1 (25)	1 (20)
Perpetrator was punished	0 (0)	0 (0)	0 (0)	1 (20)
Perpetrator changed crews	20 (69)	5 (63)	2 (50)	3 (60)
Victim changed crews	22 (76)	7 (88)	1 (25)	2 (40)
Victim suffered reprisal	28 (97)	8 (100)	2 (50)	3 (60)
Victim lost job	28 (97)	7 (88)	2 (50)	3 (60)
*Women significantly different from men within the same country (p < 0.05) None of Table 3B WSH occupational infrastructure characteristics were significantly different.				

2.7.6 Table 4: Selected experiences of workplace sexual harassment and associations with gender by country among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Table 4: Selected experiences of workplace sexual harassment and associations with women gender by country among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico						
WSH Items	UNITED STATES			MEXICO		
	Women (n=59)	Men (n=38)	OR (95% CI)	Women (n=60)	Men (n=40)	OR (95% CI)
	n (%)	n (%)		n (%)	n (%)	
GD1	26 (44)	14 (37)	1.35 (0.58, 3.12)	34 (57)	25 (63)	0.78 (0.35, 1.78)
GD2	25 (42)	16 (42)	1.01 (0.44, 2.31)	26 (43)*	27 (68)	0.38 (0.16, 0.88)
GD3	23 (39)	13 (34)	1.23 (0.52, 2.87)	34 (57)	20 (50)	1.31 (0.58, 2.92)
HB1	24 (41)	17 (45)	0.85 (0.37, 1.9)	39 (65)	27 (68)	0.89 (0.38, 2.09)
HB2	23 (39)	11 (29)	1.57 (0.65, 3.76)	30 (50)	23 (58)	0.74 (0.33, 1.65)
HB3	17 (29)	10 (26)	1.13 (0.45, 2.83)	15 (25)	11 (28)	0.88 (0.35, 2.18)
USA1	24 (41)*	6 (16)	3.66 (1.32, 10.09)	18 (30)	13 (33)	0.89 (0.38, 2.11)
USA2	12 (20)	2 (5)	4.59 (0.97, 21.84)	20 (33)	9 (23)	1.72 (0.69, 4.30)
USA3	31 (53)	12 (32)	2.40 (1.02, 5.63)	33 (55)	16 (40)	1.83 (0.81, 4.13)
USA4	19 (32)	11 (29)	1.16 (0.48, 2.83)	32 (53)	27 (68)	0.55 (0.24, 1.27)
QPQ1	4 (7)	1 (3)	2.69 (0.29, 25.04)	7 (12)	2 (5)	2.51 (0.49,12.75)
QPQ2	4 (7)	2 (5)	1.31 (0.23, 7.52)	6 (10)	4 (10)	1.00 (0.26, 3.79)
QPQ3	4 (7)	1 (3)	2.69 (0.29, 25.04)	6 (10)	3 (8)	1.37 (0.32, 5.83)

Key: *gender discrimination* (GD), *hostile behavior* (HB), *unwanted sexual attention* (USA), and *quid pro quo* (QPQ)

[a] p-values based on chi-squared tests of association or Fisher's exact test where cell size is < 5.

*Women significantly different from men within the same country (p < 0.05)

2.7.7 Figure 3: Average gender discrimination (GD), hostile behavior (HB), unwanted sexual attention (USA), quid pro quo (QPQ) sexual harassment item frequency among women and men farmworkers in California, United States, and Michoacán, Mexico. * $p < .05$ women significantly different from respective men in Kruskal-Wallis testing. Levels include never (0 times), sometimes (1-3 times a year), frequently (4-6 times a year), very frequently (1-2 times a month), and always (1-2 times a week).

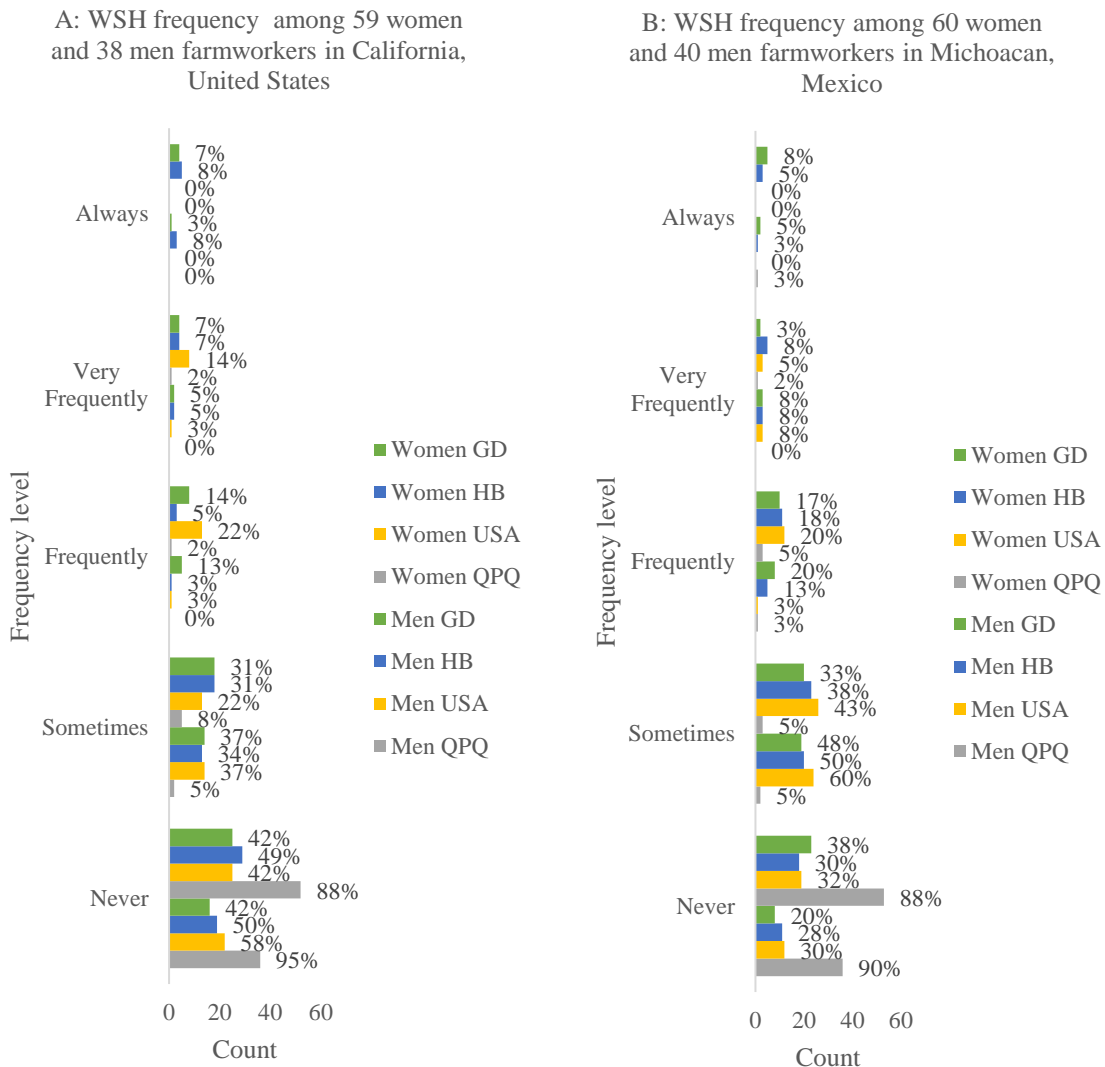


Figure 3: WSH frequency of gender discrimination (GD), hostile behavior (HB), unwanted sexual attention (USA), and quid pro quo (QPQ) among women and men farmworkers in California, United States, and Michoacán, Mexico. * $p < .05$ women significantly different from respective men in Kruskal-Wallis testing. Levels include never (0 times), sometimes (1-3 times a year), frequently (4-6 times a year), very frequently (1-2 times a month), and always (1-2 times a week).

2.7.8 Figure 4: Gender discrimination (GD), hostile behavior (HB), unwanted sexual attention (USA), quid pro quo (QPQ) sexual harassment item perpetrator positions among victims in a sample of 197 farmworkers in California, United States and Michoacán, Mexico. Leader perpetrators included positions with authority (contractor, transporter, crew leader, supervisor, and field owner).

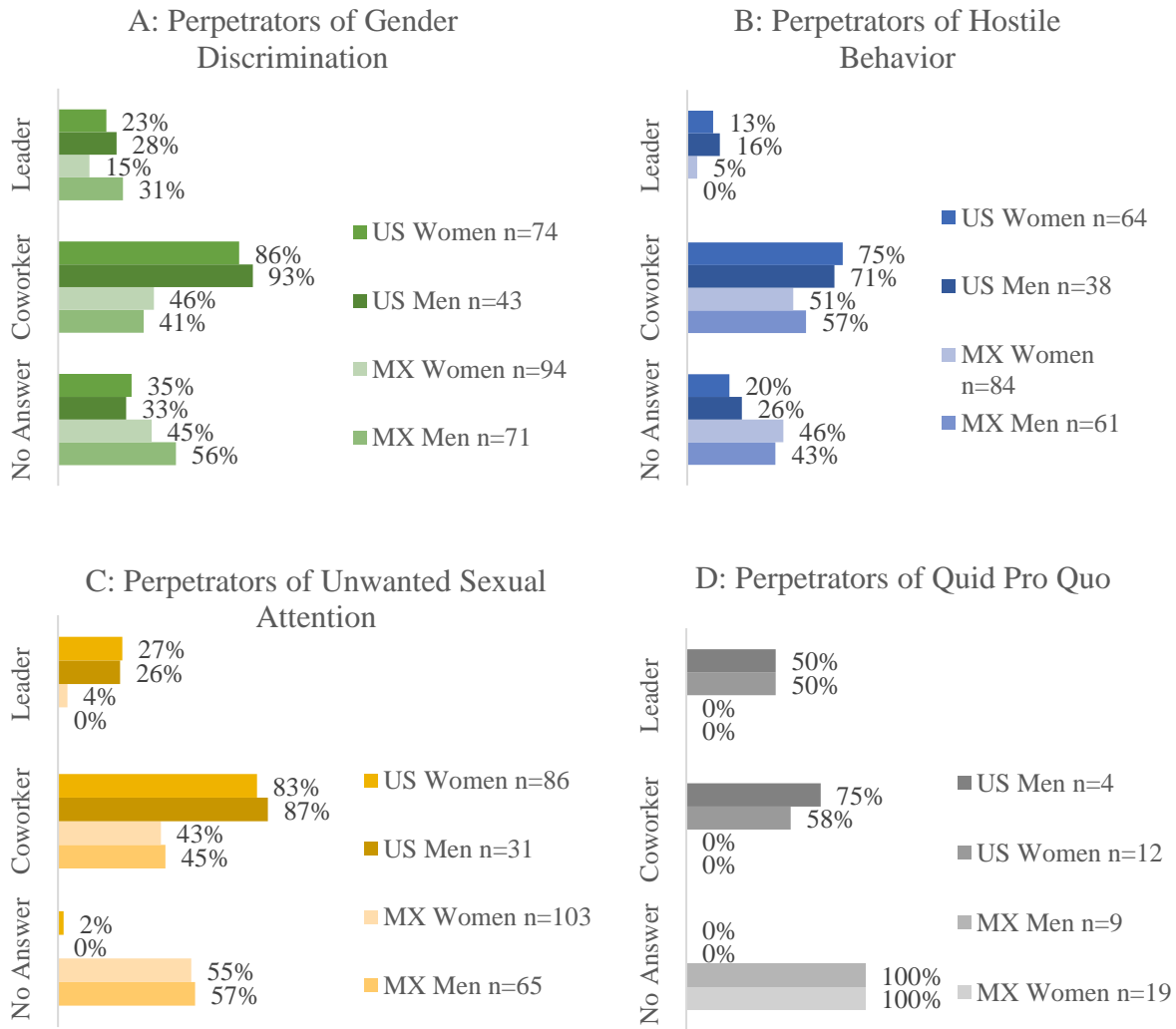


Figure 4: Perpetrators of all types of workplace sexual harassment experiences. Part A presents gender discrimination (GD), part B presents hostile behavior (HB), part C presents unwanted sexual attention (USA), and part D presents quid pro quo (QPQ) among women and men farmworkers in California, United States, and Michoacán, Mexico.

2.7.9 Figure 5: Mixed gender combinations of perpetration of workplace sexual harassment among 197 farmworkers in California United States and Michoacán Mexico.

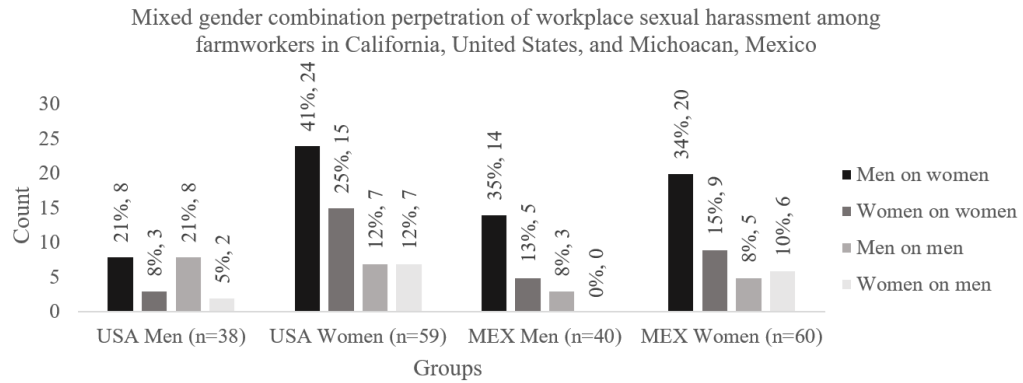


Figure 5: Mixed gender combinations of perpetration of workplace sexual harassment among 197 farmworkers in California United States and Michoacán Mexico.

Chapter 3: The sexual harassment myth acceptance and other beliefs among men and women farmworkers

3.1 Introduction

3.1.1 Workplace sexual harassment among farmworkers

The workplace sexual harassment (WSH) of women farmworkers is an epidemic in agriculture (Flores 2018). It is longstanding and widespread in the United States (Waugh 2010, Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016) and Mexico (Arellano Gálvez 2014, Andrade-Rubio 2016). Eighty percent of women farmworkers surveyed in California experienced WSH (Waugh 2010).

Farmworker women are disproportionately impacted by WSH. The WSH that farmworker women face surpasses that seen in fields such as university faculty, federal employees, and soldiers (Richman, Rospenda et al. 1999, Barth, Kimerling et al. 2016, Moylan and Wood 2016, Gurung, Ventuneac et al. 2018, Mulaphong 2019). Lack of work authorization (i.e., “undocumented” status) compounds marginalization and vulnerability, especially among women (Villegas 2019).

3.1.2 WSH reporting

WSH often goes unreported. Women rarely file formal complaints (Schneider, Swan et al. 1997, Cortina 2004), and women farmworkers often ignore WSH for fear of losing their job (Murphy, Samples et al. 2015). Some women farmworkers escape WSH by leaving their job. However, it is often the case that these women end up again facing WSH at their next employment (Kim, Vásquez et al. 2016).

The workplace administrative infrastructure and culture can also make it less likely that farmworkers report WSH. Farmworkers are sometimes explicitly and implicitly discouraged from reporting on the job. Women farmworkers forgo reporting when they see leadership perpetrating WSH rather than protecting employees (Kim, Vásquez et al. 2016). In the Central Valley of California, one employer fired a perpetrator only to rehire them somewhere else (Waugh 2010). A woman farmworker who was interviewed among this group dropped her report because her employer’s human resources personnel asked her to ignore the incident instead of address it. Other farmworker women interviewed said they felt unable to report because they did not speak English well enough to communicate with office

personnel, and they feared shame and stigma amongst their crew and community (Waugh 2010). Men farmworkers in another study have said they forgo reporting because they believe leadership and coworkers will laugh at them and not believe them (Prado, Rivera Heredia et al. 2020).

3.1.3 Antecedents of WSH

Factors such as the workplace's organizational climate and traditional gender context of particular jobs influence the occurrence and response to WSH (Willness, Steel et al. 2007). The organizational climate consists of a tolerance for WSH and whether harassment remedies exist (Fitzgerald, Swan et al. 1995). The gendered context of a job comprises the gender ratio of the workgroup, sex of supervisor, and the traditionally male duties (Fitzgerald, Swan et al. 1995). Harassment occurs less frequently in groups whose members perceive that the organization will not tolerate WSH and where workgroups are gender-balanced (Fitzgerald, Drasgow et al. 1999). A workplace that tolerates WSH and where women are a minority can foster an environment in which WSH thrives.

It is important to understand how characteristics of the employment setting affect risk of WSH. A 30-year review of WSH found that perceptions of organizational tolerance have a greater influence on the attitudes and behaviors of employees than the existence of formal rules and regulations (McDonald 2012). Ignoring WSH can lead to increased tolerance and effective endorsement of violence (Krings and Facchin 2009, Mallett, Ford et al. 2019). WSH arises, in part, because certain environments permit acting out of sexist beliefs and encourage others to join in (Godsil, Tropp et al. 2016).

It has also been found that in organizations where women are the minority, the workplace culture is dominated by "gendered behavior, cultural symbols of masculinity, male superiority, and sexual bravado" (Willness et al., 2007 citing Glick, 1991; Stockdale, 1993). Ignoring victims of WSH can lead to less support for survivors and a higher likelihood of perpetrating WSH among co-workers (Krings and Facchin 2009, Mallett, Ford et al. 2019). Male workers who are likely to harass have a greater proclivity to sexually harass in workplaces that ignore victims (Krings and Facchin 2009).

The perpetrators' beliefs shed light on why they target others. People with sexist beliefs are more likely to commit WSH. Acceptance of sexual harassment myths reveals attitudes and beliefs that are generally false, but widely and persistently held, and that justify and facilitate harassment (Lonsway, Cortina et al. 2008). These beliefs also lead to more victim blaming (De Judicibus and McCabe 2001). These beliefs and myths pose a serious obstacle for recognition of WSH, and can hinder efforts to help victims (Lonsway, Cortina et al. 2008), such as supporting victims and reporting WSH.

The Spanish adaptation of the Illinois Sexual Harassment Myth Acceptance (ISHMA) scale exists, but has yet to be applied among farmworkers (Expósito, Herrera et al. 2014). A closer look at these beliefs and myth acceptance would help improve prevention, reporting, and response to WSH among farmworkers. Whereas victim blaming has been found among men and women farmworkers (Prado, Rivera Heredia et al. 2020), many other kinds of myth beliefs listed in the ISHMA may exist.

To our knowledge there are no prior survey studies comparing WSH myth acceptance among farmworkers in the United States and Mexico. Such comparison would offer a transcultural view that improves the impact of findings at the local, national, and global level (Valentín, Elena et al. 2005, Prado, Rivera Heredia et al. 2020). These findings would also be relevant because Mexico is the country that most frequently sends farmworkers to California and the United States (Hernandez, Gabbard et al. 2016). We hypothesize that due to acculturation, farmworkers in the United States may be less accepting of myths than are farmworkers in Mexico. Comparing myth acceptance between men and women farmworkers in the United States and Mexico would offer valuable information that could improve efforts to prevent, report, and respond to WSH in agriculture.

3.1.4 This study

In this study we develop a survey to investigate WSH myth acceptance among women and men farmworkers in California, USA, and Michoacán, Mexico. We compare WSH myth acceptance among men and women farmworkers and to compare findings binationally. The study's purpose is for these

findings to support the agricultural community, educators, researchers, and organizations working to prevent and respond to WSH.

3.2 Methods

3.2.1 Participants, community advisory board, and sampling

Our study methods have been previously described in detail (Prado et al 2021). We briefly summarize below.

We recruited farmworkers in Michoacán and California with the help of community leaders. We also conducted outreach efforts using Spanish and Purhépecha translators. Inclusion criteria allowed participants to interview if they were at least 18 years old, a currently employed agricultural worker, and had work experience for at least the previous 12 months.

A local Community Advisory Board (CAB; *Mesa Consultiva*) was convened in Michoacán and California. These boards included farmworkers, farmworker welfare advocates, non-profit representatives, legal entities, researchers, industry officers, and community leaders. CAB's offered input for recruitment strategy, survey items, and dissemination efforts to ensure that our approach and instruments were sensitive to the sociocultural characteristics of the community.

Participants were recruited in the communities they lived in. Researchers visited workers' homes to recruit participants. Local farmworker coalitions and Migrant Housing Centers assisted recruiting efforts in California. Local community leaders and long-standing community members assisted recruiting efforts in Michoacán.

3.2.2 Survey development

Focus group results (Prado, Rivera Heredia et al. 2020), validated surveys (Expósito, Herrera et al. 2014), pilot work, binational collaboration, and CAB input informed survey development. WSH myth acceptance dimensions were inspired by validated survey items. Bystander vignettes and additional WSH belief items were inspired by research, farmworker feedback, and CAB input specifically for this study. Focus group results revealed that men and women experienced direct (i.e., were personally targeted) and

indirect (i.e., were witnesses of incidents) sexual harassment. Given this information, we included WSH vignettes that included woman-on-woman and man-on-man incidents. We partnered with a local clinic providing primary health care services to northern California farmworkers for a pilot with four women and two men farmworkers. Finally, we presented the survey instrument to our CAB for review and comment. Other key questions were asked based on communities concerns through CAB members.

3.2.3 Survey reliability

Our WSH myth acceptance survey section was tested for item reliability under each WSH myth acceptance dimension using principal component analysis and calculating Cronbach's alpha (α) in SAS 9.4. We tested based in the five-level Likert scale (totally agree, agree, neutral, disagree, and totally disagree). Items were reliable under each dimension with an α at 0.70 or greater. Final coefficient α 's ranged from 0.46 to 0.76. Not all the final coefficient alphas measure above 0.7 for both the total $n=197$ subjects and the separated binational groups ($n=97$ in California, $n=100$ in Michoacán). We attempted to delete items to increase α 's. A minimum of three items are kept under each dimension. Eliminating item five under Fabrication/Exaggeration slightly increased α 's, and further deletions did not improve reliability (Table 2). Eliminating item one under Ulterior Motive also slightly improved α 's, and eliminating item three under Natural Heterosexuality slightly improved α 's. The only WSH myth acceptance dimension in which all subscales contained an α of 0.70 or above was Natural Heterosexuality. An α level 0.6 has been previously used to validate a scale in rural populations or low literacy (Heredia and Padilla 2012). Therefore, we here restrict analysis to the item level and explore myths whose items yielded an α of 0.6 or above, and we report results based on each item.

3.2.4 Data collection

Farmworker survey recruitment efforts began in June and July of 2017. California ended recruitment in October 2017, and Michoacán in February 2018. Participants were reached through door-to-door canvassing, flyers, and visits in popular areas such as laundromats, worship centers, and housing offices. We left flyers with a phone number for participants to call and set up individual appointments to provide informed consent and complete the interviewer-administered survey. Interviews in Michoacán

were conducted in participants' homes. Interviews in California were conducted individually in a private isolated office space on Migrant Housing Center grounds. All interviews were conducted in Spanish and lasted approximately one hour. CABs helped researchers choose participant incentives that were appropriate to their locale. California participants received a \$50 gift card at a local department store, and Michoacán participants received a luggage bag worth \$25. All study activities were approved by the Institutional Review Board at the University of California Davis (UCD IRB# 946036-6). We conducted 197 surveys (38 men and 59 women in California; 40 men and 60 women in Michoacán).

3.2.5 Sexual harassment myth acceptance

The Spanish-language adaptation to the Illinois Sexual Harassment Myth Acceptance Scale (ISHMA) was validated and proved reliable on evaluating overall acceptance of sexual harassment myths in Spanish-speaking men and women populations (Expósito, Herrera, Valor-Segura, Herrera, & Lozano, 2014). The Spanish ISHMA supplied at least three items from four dimensions (Figure 1):

Fabrication/Exaggeration (FE - belief that women make up, exaggerate, and/or invite sexual harassment), Ulterior Motive (UM - belief in ulterior motives for filing sexual harassment claims), Natural Heterosexuality (NE - belief that sexual harassment is simply romantic behavior that women enjoy), Women's Responsibility (WR - belief that the responsibility for controlling sexual harassment lies with the targeted woman).

Responses measured level of agreement with WSH myths. Pilot work informed us to compress the seven Likert level responses to 5. Participants selected their responses from our five-level Likert agreement scale (totally agree, agree, neutral, disagree, and totally disagree). We also later dichotomized responses (totally agree or agree vs. neutral or disagree or totally disagree) for logistic regression and 95% confidence interval estimate calculations.

3.2.6 Bystander-effects vignettes

Participants were presented with a survey section on workplace sexual harassment vignettes to assess level of discomfort among bystanders, i.e., those witnessing the WSH incident. While situations

were read to farmworkers, they were asked to imagine themselves at work witnessing the event. Responses were measured on a Likert scale (very comfortable, comfortable, neutral, uncomfortable, to very uncomfortable) to indicate their level of discomfort with standardized vignettes of WSH situations (Figure 2). We also later dichotomized responses (totally agree or agree vs. neutral or disagree or totally disagree) for logistic regression and 95% confidence interval estimate calculations.

3.2.7 Additional WSH belief items

Additional WSH belief items (A1-A7, Figure 3) were designed to report farmworkers' beliefs on this sensitive topic. These represent other fears, concerns, and barriers face by farmworkers in the prevention and response to WSH in agriculture.

3.2.8 Analysis

3.2.7.1 *Descriptive analysis*

Frequencies were calculated for all measures to characterize demographic characteristics. We also examined frequencies under sexual harassment myth acceptance and bystander effects. We stratified measures by country and gender.

3.2.7.2 *Statistical analysis*

Summary statistics, chi-squared, and Fisher's exact tests were calculated for WSH myth acceptance and bystander effects. Statistical testing was conducted in SAS 9.4. All variables were evaluated against country and gender. An $\alpha < .05$ was considered statistically significant. Odds ratios included 95% confidence intervals. Preliminary results were presented to CAB members for review and comment.

3.3 Results

3.3.1 Demographics

Demographic variables for farmworkers have been previously described (Prado et al. 2021). We briefly summarize that they were generally similar across country and gender (Table 1). Most participants in California and Michoacán were born in Mexico. Participants in California were older than those in Michoacán. Workers in California were more educated than in Michoacán. A high proportion of all workers had children. Women farmworkers in Michoacán were the only group in which the majority were

not married. These women also were of the youngest median age. Most farmworkers spoke Spanish. Purhépecha was only spoken in Michoacán.

3.3.2 Sexual harassment myth acceptance

Sexual Harassment Myth Acceptance for farmworkers differed by country but was similar by gender (Table 3). Agreement levels among Michoacán farmworkers were generally higher than those among California workers. Acceptance of specific myths in California ranged from 10% to 73% for women farmworkers and 13% to 68% for men. Among these women, the WR2 (“Women can usually make men stop looking at them sexually by complaining about it to their boss”) and UM4 (“A woman could easily ruin her boss’s professional career if she reports that he made sexual advances towards her”) myth showed the greatest acceptance and the NE4 (“Women shouldn’t be so quick to consider it offensive when a man makes sexual advances toward them at work”) myth yielded the least acceptance. Among men in California, the UM4 myth yielded the greatest acceptance and the NE2 (“Deep down most women enjoy it when men at work make sexual advances toward them”) myth yielded the least acceptance. Myth acceptance in Michoacán ranged from 15% to 78% for women and 28% to 88% for men. Among these women, the UM4 and FE5 (“A woman could easily ruin her boss’s professional career if she reports that he made sexual advances towards her”, “Sexual harassment reports that weren’t communicated in a timely manner are difficult to believe”) myths yielded the greatest acceptance, and the FE2 (“Women who express having been sexually harassed normally exaggerate”) myth yielded the least acceptance. Among these men, the UM4 myth yielded the greatest acceptance, and the UM1 (“Women often present sexual harassment complaints in a superficial way”) myth yielded the least acceptance. The only sexual harassment myth item that was significantly different between men and women in California was item one under Ulterior Motive (UM1, P value = 0.05). Men were in significantly higher agreement with this myth than were women in California. Only two sexual harassment myths were significantly different between men and women in Michoacán under Fabrication/Exaggeration (FE2, P value = 0.03, Fe4, P value = <.0001). Men had a significantly higher agreement with these myths than women in Michoacán.

Notable differences by country included significantly greater agreement in Michoacán compared to California for nine myths. These included two Fabrication/Exaggeration items (FE1, FE5), three Ulterior Motive myths (UM2, UM3, UM4), four Natural Heterosexuality myths (NE1, NE2, NE3, NE4), and one Women's Responsibility myth (WR3). Finally, it is important to note that the proportion of farmworkers who accepted two or more myths (WR, UM, NE, or FE) were 63% of men and 81% of women in California and 100% of men 97% of women in Michoacán.

3.3.3 Bystander discomfort

Bystander discomfort on Workplace Sexual Harassment Vignette for farmworkers by gender was generally similar within each country (Table 4). When stratified by gender in Michoacán, men and women were not significantly different for all seven vignettes. All women farmworkers in Michoacán were uncomfortable with two of the seven vignettes: V5 (sexual demands from leadership) and V6 (physical sexual harassment). Men reported significantly greater discomfort than women in California for V2 (being the object of sexual staring and asking relationship status) (P Value = 0.01). All women farmworkers in California were uncomfortable with two of the seven vignettes: V5 (sexual demands from leadership) and V7 (sexualized staring and harassment). Notable differences were seen by country. Michoacán farmworkers reported significantly greater discomfort than California farmworkers for V2 (sexual staring and asking relationship status), V3 (male-on-male harassment), and V4 (woman-on-woman harassment).

3.3.4 Additional questions posed by farmworkers and CAB

Additional questions on farmworker beliefs revealed greater agreement between men and women in California compared to Michoacán (Table 5). Only one significant difference was found between men and women in Michoacán. This item stated, "It isn't worth reporting WSH because no one does anything," and agreement was significantly higher among women than men. At least 83% of all California farmworkers agreed with all these items. Over 50% of all Michoacán farmworkers agreed with all these items. Over 85% of all farmworkers agreed that "Something must be done to prevent WSH in

Agriculture.” All Michoacán farmworkers were in significantly greater agreement for five (A1, A2, A3, A4, A5) out of the six additional belief items than California farmworkers.

3.4 Discussion

In this study we developed a survey for a cross-sectional study to examine perspectives on WSH among 197 women and men farmworkers in California, USA, and Michoacán, Mexico. These findings evaluate WSH myth acceptance, WSH bystander discomfort, and other beliefs among farmworkers. We found that myth acceptance existed among all farmworkers and that there was greater acceptance of common WSH myths in Michoacán compared to California farmworkers. We did not find differences in discomfort felt between men and women in bystander WSH vignettes. Lastly, we found overwhelming agreement that something must be done to prevent WSH in agriculture.

Demographic findings offer valuable information. Lower education levels in Mexico can both disempower and place workers at greater vulnerability to exploitation. The family crews that farmworkers have in our findings is a context that should be considered in understanding the impact of WSH and prevention and response efforts. Education and training in Indigenous languages and Spanish improves accessibility for vulnerable groups.

Acceptance of sexual harassment myths among farmworkers differed by country more so than by gender. Men and women similarly agreed with WSH myths in California groups and similarly agreed in Michoacán groups. Research has shown that men’s sexually harassing behaviors are associated with sexual harassment myth acceptance (Hardies 2019). Myths around ulterior motives and women’s responsibility can also reduce the support that women farmworkers offer victims (Murphy, Samples et al. 2015). For this reason, we recommend trainings include debunking WSH myths.

Discomfort with bystander WSH vignettes was generally the same among men and women in Michoacán and California. Women in California reported significantly more discomfort by vignette in which a male worker asked a women co-worker if she had a boyfriend. All Michoacán women reported discomfort with bystander exposure to sexual demands from leadership and physical sexual harassment.

All women in California reported discomfort with bystander exposure to sexual demands from leadership and sexualized staring and harassment. These results showing that both men and women are discomforted by bystander exposure to WSH reveals that both women and men are adversely impacted by WSH in agriculture.

Additional belief item questions posed by farmworkers and CAB members further demonstrate the fears, concerns, and barriers related to WSH in agriculture. Women in Michoacán reported a significantly greater feeling of helplessness than men. However, men and women were in similar in agreement that reporting WSH can lead to job loss, public shaming, and problems related to work authorization. Results on the overwhelming agreement among all farmworkers that “something must be done to prevent WSH in agriculture” support the need for leadership to take a stronger stance and active role in punishing offenders, training crews with bystander strategies, and supporting victims.

Our binational comparisons on myth acceptance, bystander discomfort on WSH vignettes, and additional belief items offer a transcultural view of social norms. These comparisons inform efforts that can have an impact at the local, national, and global level (Valentín, Elena et al. 2005). The higher level of discomfort with bystander vignettes and higher agreement with myths and beliefs among participants in Mexico may relate to stronger social norms of women’s responsibility, male privilege, patriarchal customs, and more rigid gender roles than in the United States. For example, both vignettes that included WSH on homosexual participants invoked greater discomfort among farmworkers in Mexico than in the United States (Diaz and Bui 2017, Oswald 2019). This may be due to farmworkers in Mexico being less accustomed to discussing homosexuality and associated WSH (Prado, Rivera Heredia et al. 2020). WSH against Hispanic women agricultural workers who identified as homosexuals in Canada has been documented (Villegas 2019), and it is important to shed light on this topic.

Demographic findings offer details to improve targeted training. Our findings regarding WSH myths suggest that both men and women would benefit from training that informs workers on WSH facts to reduce social barriers to WSH prevention. WSH bystander discomfort levels across genders shows that

both women and men too are negatively impacted by WSH on the job. Lastly, results on held beliefs offer insight in farmworker's fears, concerns, and barriers to reporting.

3.5 Conclusion

Study strengths include the use of a community advisory board consisting of farmworkers, advocates, non-profit representatives, legal entities, industry officers, and community leaders contributed expertise and input for study strategies and materials. Additionally, this study uses surveys to look at WSH myth acceptance, bystander impact, and other beliefs in agriculture among both men and women farmworkers. We also compare findings binationally in Michoacán, Mexico, and California, United States. These findings offer valuable information on the ISMA's application among farmworkers, perspectives that form social barriers to WSH prevention, and the adverse impact of WSH on both men and women. Limitations include participants self-selecting themselves and reduced geographic scope.

The information gained aids the development of educational materials and policy recommendations for the prevention of WSH in agriculture. The study's purpose is for these findings to support the agricultural community, educators, researchers, and organizations working to prevent and respond to WSH. These comparisons are relevant because Mexico is the country that most frequently sends farmworkers to California and the rest of the United States.

3.6 Funding and acknowledgments

We thank the farmworkers and organizations that made this study possible. In México, these included *La Confederación Nacional Campesina* (the National Women Farmworker Confederation), and *Red Solidaria de Derechos Humanos* (Solidarity Network for Human Rights) and faculty at the department of psychology at the Universidad Michoacana de San Nicolás de Hidalgo. In the US, these included *Líderes Campesinas* (Farmworker Women Leaders), *Alianza Nacional De Campesinas* (National Farmworkers Womens' Alliance), the Yolo County Housing Authority, and the Western Center for Agricultural Health and Safety (WCAHS). This research was funded partly by PIMSA (*Programa de Investigación en Migración y Salud*-The Migration and Health Research Program), the WCAHS (NIOSH

grant U50 OH007550), and by National Institute for Occupational Safety and Health (NIOSH) Training Grant T42-OH008429.

3.7 Tables and figures

3.7.1 Figure 1: Workplace sexual harassment myth acceptance dimension items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Figure 1: Workplace sexual harassment myth acceptance dimension items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico		
Dimension	Item	Myth
Fabrication/ Exaggeration	FE1	A woman's report of sexual harassment can only be taken seriously if she loses her job.
	FE2	Women who express having been sexually harassed normally exaggerate.
	FE3	If a woman is sexually harassed, she must have done something to provoke it.
	FE4	If a woman doesn't present a formal complaint, then probably the incident wasn't serious enough to be sexual harassment.
	FE5	Sexual harassment reports that weren't communicated in a timely manner are difficult to believe.
Ulterior Motive	UM1	Women often present sexual harassment complaints in a superficial way.
	UM2	Sometimes women report sexual harassment to obtain money from their employers.
	UM3	Women who are discovered having an affair with their boss occasionally report that it was sexual harassment.
	UM4	A woman could easily ruin her boss's professional career if she reports that he made sexual advances towards her.
Natural Heterosexuality	NE1	The majority of women feel flattered when men at work notice them sexually.
	NE2	Deep down most women enjoy it when men at work make sexual advances toward them.
	NE3	It is inevitable that men flirt with women sexually in the workplace.
	NE4	Women shouldn't be so quick to consider it offensive when a man makes sexual advances toward them at work.
Women's Responsibility	WR1	Women can usually make men stop looking at them sexually by asking them to stop.
	WR2	Women can usually make men stop looking at them sexually by complaining about it to their boss.
	WR3	Almost all sexual harassment cases would end is the women would simply tell the men to stop.

3.7.2 Figure 2: Workplace sexual harassment bystander vignette discomfort items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Figure 2: Workplace sexual harassment bystander vignette discomfort items utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico	
Item	Vignette
V1	“A woman on her first day notices men staring at her hips and giggling ...”
V2	“A look of admiration from head-to-toe asking if they are single ...”
V3	“Gay worker rejects hug advances from another male worker ...”
V4	“Women rejects kiss advances from another women ...”
V5	“Supervisor demands sexual favors from woman worker trapped in truck ...”
V6	“Boss trains woman farmworker and presses his body against hers while cutting ...”
V7	“Women’s behinds are video recorded as they work ...”
This table displays a shortened version of the vignettes. Please contact researchers or visit https://aghealth.ucdavis.edu/ to contact department.	

3.7.3 Figure 3: Additional items on workplace sexual harassment beliefs utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Figure 3: Additional items on workplace sexual harassment beliefs utilized in a survey among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico	
Item	Belief
A1	“It isn’t worth reporting WSH because no one does anything.”
A2	“It isn’t worth reporting WSH because you would lose your job.”
A3	“It isn’t worth reporting WSH because the people will speak badly about the victim.”
A4	“WSH only happens to the young and pretty.”
A5	“If someone reports WSH they will have problems with immigration.”
A6	“Something must be done to prevent WSH in agriculture.”

3.7.4 Table 1: Selected demographic characteristics of 197 Hispanic farmworkers evaluated for workplace sexual harassment myth acceptance in California, United States, and Michoacán, Mexico

Variable	UNITED STATES		MEXICO	
	Women (n=59) n (%)	Men (n=38) n (%)	Women (n=60) n (%)	Men (n=40) n (%)
Country of birth				
MEX	47 (80)	33 (87)	58 (97)	40 (100)
US	12 (20)	5 (13)	2 (3)	0 (0)
Age				
Median	34	42.5	30.5	31.5
IQR	27-53	32-54	24-44	23.5-41
Education				
0-3 y	7 (12)	4 (11)	8 (13)	9 (23)
4-7 y	10 (17)	15 (39)	21 (35)	16 (40)
8-11 y	11 (19)	6 (16)	28 (47)	13 (33)
12 y, Trade, College	31 (53)	13 (34)	3 (5)	1 (3)
Have children				
≥1	46 (78)	34 (89)	49 (82)	30 (75)
Civil status				
Married	46 (78)	36 (95)	21 (35)	31 (78)
Single	12 (20)	1 (3)	17 (28)	5 (13)
Living with your partner	1 (2)	0 (0)	20 (33)	3 (8)
Widow	0 (0)	1 (3)	1 (2)	1 (3)
Language				
Spanish	58 (98)	37 (97)	57 (95)	26 (65)
English	1 (2)	0 (0)	0 (0)	0 (0)
Purhépecha	0 (0)	0 (0)	3 (5)	14 (35)

3.7.5 Table 2: Evaluation of sexual harassment myth acceptance reliability on 5-level Likert scale among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Dimension	Items	α for total population (n=197)	α for California population (n=97)	α for Michoacán population (n=100)
Fabrication/exaggeration	FE1, FE2, FE3, FE4, FE5 ^a	0.69	0.68	0.70
Ulterior Motive	UM1 ^b , UM2, UM3, UM4	0.50	0.54	0.46
Natural Heterosexuality	NH1, NH2, NH3 ^c , NH4	0.75	0.73	0.76
Women's Responsibility	WR1, WR2, WR3	0.67	0.70	0.62

^a Dropping FE5 changes α to 0.70, 0.66, and 0.73 (values do not further increase with any more deletions).
^b Dropping UM1 changes α to 0.59, 0.53, and 0.57.
^c Dropping NH3 changes α to 0.77, 0.66, and 0.80.

3.7.6 Table 3: Acceptance of selected sexual harassment myths by country and gender among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Myth	USA (n=97)			MEXICO (n=100)		
	Women (n=59) n (%)	Men (n=38) n (%)	OR (95% CI)	Women (n=60) n (%)	Men (n=40) n (%)	OR (95% CI)
FE1	12 (20)	7 (18)	1.13 (0.40, 3.19)	23 (38)	20 (50)	0.62 (0.28, 1.40)
FE2	12 (20)	11 (29)	0.63 (0.24, 1.61)	9 (15)	14 (35)	0.33 (0.13, 0.86)*
FE3	7 (12)	9 (24)	0.43 (0.15, 1.29)	11 (18)	14 (35)	0.42 (0.17, 1.05)
FE4	15 (25)	11 (29)	0.84 (0.34, 2.09)	13 (22)	25 (62)	0.17 (0.07, 0.40)*
FE5	24 (41)	17 (45)	0.85 (0.37, 1.93)	47 (78)	31 (78)	1.05 (0.40, 2.75)
UM1	9 (15)	13 (34)	0.35 (0.13, 0.92)*	17 (28)	11 (28)	1.04 (0.43, 2.55)
UM2	26 (44)	14 (37)	0.75 (0.32, 1.78)	39 (65)	18 (45)	2.27 (1.00, 5.14)
UM3	26 (44)	16 (42)	1.08 (0.48, 2.47)	35 (58)	25 (63)	0.84 (0.37, 1.91)
UM4	43 (73)	26 (68)	1.24 (0.51, 3.03)	47 (78)	37 (93)	0.29 (0.08, 1.11)
NE1	14 (24)	9 (24)	1.00 (0.38, 2.61)	23 (38)	19 (48)	0.69 (0.31, 1.54)
NE2	7 (12)	5 (13)	0.89 (0.26, 3.03)	19 (32)	13 (33)	0.96 (0.41, 2.27)
NE3	20 (34)	11 (29)	1.26 (0.52, 3.05)	32 (53)	17 (43)	1.55 (0.69, 3.46)
NE4	6 (10)	6 (16)	0.60 (0.18, 2.03)	24 (40)	19 (80)	0.74 (0.33, 1.65)
WR1	33 (56)	25 (66)	0.66 (0.28, 1.54)	37 (62)	32 (80)	0.40 (0.16, 1.02)
WR2	43 (73)	24 (63)	1.57 (0.65, 3.76)	43 (72)	35 (88)	0.36 (0.12, 1.08)
WR3	27 (46)	23 (61)	0.55 (0.24, 1.26)	41 (68)	34 (85)	0.38 (0.14, 1.06)

Key: Fabrication/Exaggeration-FE, Ulterior Motive-UM, Natural Heterosexuality-NE, Women's Responsibility-WR.
[a] p-values based on chi-squared tests of association. Cells at or smaller than 5 p-values based on Fishers exact tests.
*p<.05 women significantly different from respective men in chi-square test (cells <5 with F test).

3.7.7 Table 4: Discomfort with selected sexual harassment bystander vignettes by country and gender among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Table 4: Crude odds ratio of discomfort with selected sexual harassment bystander vignettes associations by country and gender among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico						
Vignette	USA (n=97)			MEXICO (n=100)		
	Women (n=59) n (%)	Men (n=38) n (%)	OR (95% CI)	Women (n=60) n (%)	Men (n=40) n (%)	OR (95% CI)
V1	54 (92)	31 (82)	2.44 (0.71, 8.34)	58 (97)	35 (88)	4.14 (0.76, 22.51)
V2	20 (34)	23 (61)	0.33 (0.14, 0.78)*	40 (67)	30 (75)	0.67 (0.27, 1.63)
V3	49 (83)	29 (76)	1.52 (0.55, 4.18)	55 (92)	38 (95)	0.58 (0.11, 3.14)
V4	54 (92)	30 (79)	2.88 (0.86, 9.59)	59 (98)	38 (95)	3.11 (0.27, 35.44)
V5	59 (100)	36 (95)	NA	60 (100)	39 (98)	NA
V6	58 (98)	36 (95)	3.22 (0.28, 36.83)	60 (100)	38 (95)	NA
V7	59 (100)	36 (95)	NA	59 (98)	39 (98)	1.51 (0.09, 24.91)

Key: V1 - sexualized staring, V2 - sexual staring and asking relationship status, V3 - male on male harassment, V4 - women on women harassment, V5 - sexual demands from leadership, V6 - physical sexual harassment, V7 - sexualized staring and harassment.
[a] p-values based on chi-squared tests of association. Cells at or smaller than 5 p-values based on Fishers exact tests. *p<.05 women significantly different from respective men in chi-square test (cells <5 with F test).

3.7.8 Table 5: Agreement with selected workplace sexual harassment beliefs by country and gender among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico

Table 5: Agreement with selected workplace sexual harassment beliefs by country and gender among 197 Hispanic farmworkers in California, United States, and Michoacán, Mexico					
Additional Belief Items		UNITED STATES (n=97)		MEXICO (n=100)	
		Women (n=59) n (%)	Men (n=38) n (%)	Women (n=60) n (%)	Men (n=40) n (%)
A1	“It isn’t worth reporting WSH because no one does anything.”	9 (15)	7 (18)	17 (28)*	20 (50)
A2	“It isn’t worth reporting WSH because you would lose your job.”	9 (15)	5 (13)	19 (32)	14 (35)
A3	“It isn’t worth reporting WSH because the people will speak badly about the victim.”	10 (17)	4 (11)	19 (32)	20 (50)
A4	“WSH only happens to the young and pretty.”	5 (8)	6 (16)	16 (27)	14 (35)
A5	“If someone reports WSH they will have problems with immigration.”	6 (10)	5 (13)	22 (37)	18 (45)
A6	“Something must be done to prevent WSH in agriculture.”	54 (92)	33 (87)	51 (85)	34 (85)

*p<.05 women significantly different from respective men in chi-square test (cells <5 with F test).

Chapter 4: Factors associated with workplace sexual harassment among women and men farmworkers

4.1 Introduction

Many farmworkers are exposed to workplace sexual harassment (WSH) (Waugh 2010, Prado et al 2021) and certain factors influence this risk in agriculture. This paper presents an evaluation of factors believed to increase the risk of WSH among a dataset of 197 farmworkers in Michoacán, Mexico and California, United States.

4.1.1 Demographic and occupational factors related to WSH

Gender and age can moderate the risk of workplace sexual harassment. Empirical evidence overwhelmingly supports that women are the most frequent victims. Among farmworkers, women are the major victims and men are the major perpetrators in Mexico and the United States (Arellano Gálvez 2014, Murphy, Samples et al. 2015). Farmworkers have observed that “just being female in the fields creates risks” (Castañeda and Zavella 2003). Farm workers have also said that younger age increases the risk of being victimized among women and increases the likelihood of being a perpetrator among men (Prado, Rivera Heredia et al. 2020). Researchers have even documented youth farmworkers being stared at inappropriately, hearing sexual remarks made about them, having been touched in an unwanted way, and having been offered benefits in return for sexual favors (Arcury, Kearney et al. 2015).

Civil status and language barriers also increase the risk of experiencing WSH among farmworkers.

Victims in one study were single mothers and Indigenous-language speakers unable to voice their complaints in English or Spanish (Murphy, Samples et al. 2015). They believed that these were reasons they were targeted and reasons that it was harder for them to report.

Working among family has been said to have both a positive and negative impact on reporting WSH. The coworkers of farmworkers are frequently neighbors, close friends, and family members. These family crews are how most women farmworkers acquire their jobs and how they carpool travel to and from work (Waugh 2010). Some farmworkers believe working among family protects against WSH (Prado, Rivera Heredia et al. 2020). However, farmworker victims who report have said that they run the risk of social

isolation and job loss for themselves and family members (Waugh 2010, Murphy, Samples et al. 2015, Kim, Vásquez et al. 2016). Furthermore, the decision to report while working among family can induce a fear of slander or social stigma for them and their family members (Waugh 2010, Arellano Gálvez 2014, Andrade-Rubio 2016). These fears can cause women farmworker victims to stay silent, with the consequence that the WSH goes on unnoticed and underreported.

Other workplace factors are also believed to prevent sexual harassment. Organizational context, i.e., “those aspects of organizational climate having to do with tolerance of sexual harassment as well as to the presence, accessibility, and effectiveness of harassment remedies” (Fitzgerald, Swan et al. 1995), has been found to moderate WSH (Willness, Steel et al. 2007). Farmworkers believe that specific factors of organizational climate such as dress codes, trainings, and reporting policies can prevent WSH (Kim, Vásquez et al. 2016, Prado, Rivera Heredia et al. 2020). Farmworkers in the United States allude to how work authorization, working in the United States, birthplace in the United States, and assimilation can also protect against WSH (Villegas 2019, Prado, Rivera Heredia et al. 2020).

4.1.2 This study

To date, limited quantitative information exists on significant associations and their directions between these factors and the likelihood of WSH exposure. We utilize data from farmworkers’ responses to a survey on workplace sexual harassment that was collected in California, United States, and Michoacán, Mexico. Using tests of correlation and logistic regression, we evaluate key factors suspected of affecting risk for WSH.

4.2 Methods

4.2.1 Sample and procedures

Previous sampling details can be found in Prado et al. (2021). A convenience sample from 2017 of 197 in Michoacán, Mexico and California, United States was used for this study. Subjects were excluded from the study if they hadn’t worked during the past year. Participation in the study was voluntary, and all explanations about the study, including the informed consent, were presented verbally in Spanish or Purhépecha by bilingual research co-investigators. Subjects gave verbal consent to be interviewed, and

the study was approved by the University of California Davis Institutional Review Board (include IRB number). Participants were given a \$50 dollar gift card to a local department store in California and a \$25 equivalent incentive in Michoacán.

This modeling study was carried out as a third phase to a mixed-methods sequential exploratory design. The first phase consisted of focus groups and the second phase consisted of collecting surveys for bivariate and stratified analysis. Procedures took place on private locations in the migrant housing centers and communities. Data was collected during non-working hours including evenings and weekends. The research team consisted of bicultural bilingual co-investigators experienced in working with agricultural workers.

4.2.2 Interview instrument

The survey was developed specifically for the present study. Development of the survey instrument was guided by focus groups, a community advisory board, pilot work, binational collaboration, and validated surveys (Cortina 2001, Expósito, Herrera et al. 2014, Prado, Rivera Heredia et al. 2020).

4.2.3 Hypothesis

This study uses outcome measures in the survey that consist of four types of WSH occurring within the previous 12 months. These are our four dependent variables: exposure to (a) gender discrimination (misogynist comments without sexual content), (b) hostile behavior (behaviors involving sexually offensive remarks and comments), (c) unwanted sexual attention (ogling, touching, requests for dates), and (d) quid pro quo (coercion, offer of favorable work conditions in return for sexual favors). All dependent variables were measured using a validated scale and items under each variable were tested for reliability and yielded Cronbach Alphas of 0.7 or greater.

Demographic and occupational independent variables were self-reported by all participants. These independent variables included country working in (1=Mexico, 0=United States), gender (1=Women, 0=Men), civil status (1=Other: Single/Open Union/Widowed, 0=Married), age (continuous), family in work crew (1=No family in crew, 0=Family in crew), education level (1=0-3 Years of

Education, 2=4-7 Years of Education, 3=8-11 Years of Education, 0=12 Years Ed, Trade Ed, College Ed, some College Ed), primary language (1=Other, 2=Spanish, 3=Purhépecha, 0=English), country of birthplace (1=Mexico, 0=United States), WSH myth acceptance (1=In agreement, 0=Not in agreement), pay level (1=Below median pay, 0=Above median pay), and presence of an officer designated by the employer to receive WSH reports (0=Yes, 1=No) comprised the set of demographic and occupational predictor variables. WSH myth acceptance was measured by farmworkers' agreement with Natural heterosexuality-based myths such as "the majority of women feel flattered when men at work notice them sexually" and "deep down most women enjoy it when men at work make sexual advances toward them." These predictor variables will be used as our independent variables. The following hypothesis were examined:

I. Significant correlations will be found between demographic and occupational factors and each of the four dependent variable exposure types of WSH (gender discrimination, hostile behavior, unwanted sexual harassment, and *quid pro quo*)

II. There are positive correlations between variables (female gender, Natural Heterosexuality WSH myth acceptance) and each of the four dependent variable exposure types of WSH (gender discrimination, hostile behavior, unwanted sexual harassment, and *quid pro quo*), i.e., WSH is more likely for women and those who report myth acceptance. There is a negative relationship between the following variables (older age, married civil status, working among family, higher education, non-indigenous language, higher pay group, and a designated WSH report person on staff) and each of the four dependent variable exposure types of WSH (gender discrimination, hostile behavior, unwanted sexual harassment, and *quid pro quo*), i.e., WSH is less likely among farmworkers who are older, married, working among family, more educated, English speaking, earning higher wage, and at a workplace where a designated WSH reporting person is on staff.

III. Models will include at least one significant demographic and at least one significant occupational factor.

4.2.4 Data analysis

All Statistical testing was conducted in SAS 9.4 (Cary, NC). The variables in the sample, including demographic and occupational factors, were summarized using descriptive statistics for victims of gender discrimination, hostile behavior, unwanted sexual harassment, and *quid pro quo* WSH types.

Spearman's correlation was used to study the relationships between the variables in the models. These were also used to eliminate the highly correlated independent variables (at or above 0.70).

Four logistic regression models were built with gender discrimination, hostile behavior, unwanted sexual harassment, and *quid pro quo* as dependent variables. Simple logistic regression was used to test each factor as an independent variable separately. Multiple logistic regression models were built to test more than one independent factor on each dependent variable. We report our final model that was developed based on forward selection and the addition of other factors that were theoretically important.

Final models for multiple logistic regression were formed using forward selection. Forward selection began with an empty equation. Predictors were added one at a time beginning with the predictor with the highest correlation with the dependent variable. Once in the equation, the variable remained there. This process was followed with the addition of variables of greater theoretical importance. A separate multiple logistic regression analysis was run for each WSH type.

4.3 Results

The sample consisted of 197 migrant farmworkers. Approximately 50% of the study participants were between the ages of 27 and 46 years. Sixty eight percent of the participants were married and 80% had children. About 47% of farmworkers had less than 7 years of education.

About half of the participants were surveyed in Michoacán, Mexico (100) and the other half in California, United States (97). Most of the participants said they were born in Mexico (90.4%) and 178 reported they spoke Spanish as their primary language (90.4%). Sixty-six percent worked in family crews and 125 worked seasonally (63.5%). About half of participants were paid by the hour (48.7%), and the other half by "Day, Crate, or Week" (45.2%).

Descriptive statistics for the demographics and occupational model factors are shown in Table 1. We see that victims who were women, farmworkers in Mexico, married workers, workers among family in their crew, workers paid the lowest wages, and workers in disagreement with myths proportions were higher for all WSH exposed outcomes (gender discrimination, hostile behavior, unwanted sexual harassment, and *quid pro quo*). There were not enough victims of *quid pro quo* to warrant analysis beyond descriptive statistics.

4.3.1 Correlations

Spearman rank coefficients between the model's dependent and predictor variables revealed significant ($p < 0.05$) correlations (Table 2). Significant correlations were found between gender discrimination and younger age ($r = -0.16$) and between gender discrimination and non-English (Spanish or Indigenous) primary language ($r = 0.19$). Significant correlations were found between hostile behavior and country of work being Mexico ($r = 0.21$), hostile behavior and younger age ($r = -0.14$), and hostile behavior and Spanish/Indigenous primary language ($r = 0.13$). Significant correlations were found between unwanted sexual attention and country of work being Mexico ($r = 0.19$), unwanted sexual attention and younger age ($r = -0.18$), and unwanted sexual attention and Spanish/Indigenous primary language ($r = 0.20$). We did not find any significant correlations between *quid pro quo* and any predictor demographic or occupational factors. All WSH types were significantly correlated with each other. Hypothesis I was supported based on the significant correlations between the factors listed above and their respective WSH. Hypothesis I was not supported for outcomes of *quid pro quo* WSH. Hypothesis II positive relationships were not supported because women gender and WSH myth acceptance did not significantly correlate with any of our WSH outcomes measured. Hypothesis II negative relationships was supported for older age and gender discrimination, older age and hostile behavior, and older age and unwanted sexual attention only.

Significant correlations ($p < 0.05$) among predictor variables were found. Non-married civil status correlated with both working in United States ($r = 0.35$) and with women gender ($r = 0.31$). Older people

correlated with both working in United States ($r=-0.28$) and with non-married civil status ($r=-0.29$). Family in crew was correlated with working in Mexico ($r=0.28$). Greater education was correlated with four predictor variables: working in the United States ($r=-0.32$), women gender ($r=0.17$), younger age ($r=-0.27$), and crews without family ($r=-0.25$). Spanish and Indigenous primary language correlated with both working in Mexico ($r=0.32$) and lower education ($r=-0.20$). Myth acceptance is correlated with three variables: working in Mexico ($r=0.24$), having family in the crew ($r=0.21$), and lower education ($r=-0.17$). Higher pay correlated with male gender ($r=-0.21$) and having a workplace designated report receiver correlated with lower pay group ($r=-0.22$).

4.3.2 Models

Simple logistic regression revealed associations between WSH types and demographic and occupational factors. Dependent WSH type variables were gender discrimination, hostile behavior, unwanted sexual harassment, and *quid pro quo*. We found significant ($p<0.05$) associations between dependent and predictor variables. Increased age was minimally protective for gender discrimination WSH (OR=0.97, 95%CI=0.95, 0.99). Country of work being Mexico increased odds of hostile behavior WSH (OR=2.48, 95%CI=1.38, 4.49) and increasing age was minimally protective for hostile behavior (OR=0.97, 95%CI=0.95, 0.99). Country of work being Mexico increased odds of unwanted sexual attention WSH (OR=2.16, 95%CI=1.20, 3.88) and increasing age was minimally protective against unwanted sexual attention WSH (OR=0.98, 95%CI=0.95, 0.99).

Forward selection yielded a logistic regression model for gender discrimination that included age and language (Table 3). We added country and gender based on theoretical importance despite them not being statistically significant.

Forward selection yielded a logistic regression model for hostile behavior discrimination that included country (Table 4). Gender was added based on theoretical importance, and age was added based on its significance in simple logistic regression. Though gender and age were not significant, their addition did not change Akaike information criterion (AIC).

Forward selection yielded a logistic regression model for unwanted sexual attention that included country (Table 5). Gender was added based on theoretical importance, and age was added based on significance in simple logistic regression. Though gender and age were not significant, their addition did not change AIC.

Hypothesis III was not supported because we were unable to find a model that included both a demographic factor and an occupational factor.

4.4 Discussion

In this paper we evaluated how demographic and occupational factors relate to the outcome of workplace sexual harassment (WSH). We used data collected among farmworkers in California and Michoacán. Gender discrimination, hostile behavior, unwanted sexual attention, and *quid pro quo* WSH outcomes were measured.

Correlations between the WSH outcomes and predictor variables offered further insight. For example, data revealed that as age increases WSH decreases. Some predictor variables were also correlated. For example, myth acceptance was correlated with working in Mexico. Logistic regression further revealed that country of work, age, and language can play a role in whether one experiences WSH.

The kinds of WSH outcomes that victims face slightly differed to what we find in empirical studies. For example, up to 24% of women farmworkers surveyed on this topic have reported *quid pro quo* (Waugh 2010). Among women farmworkers in our data, only about 12% reported experiencing *quid pro quo*. Our sample did not contain enough victims reporting *quid pro quo* for analysis beyond descriptive statistics. Gender discrimination and unwanted sexual harassment was reported by 97% and 53% of women farmworkers sampled in this previous study (Waugh 2010). In our dataset, we found that gender discrimination and unwanted sexual harassment were reported by 59% and 63% of women farmworkers.

Descriptive statistics highlighted certain characteristics among victims. These included victims who were women, Indigenous-language speakers, and those paid the lowest wages. We also found that most victims were working in Mexico, married, working among family in their crew, and disagreed with sexual harassment myths. These similarities were found among victims of all WSH outcomes despite the unequal distribution of cases.

Though most were weak, correlations revealed significant positive and negative relationships between variables. For example, working in Mexico was positively correlated with experiencing gender discrimination, hostile behavior, and unwanted sexual harassment. Older age was minimally protective against gender discrimination, hostile behavior, and unwanted sexual harassment. Lastly, speaking non-English (Spanish or Purhépecha) were positively correlated with experiencing gender discrimination, hostile behavior, and unwanted sexual harassment.

Logistic regression models provided quantitative evidence that supports an increased risk of WSH given certain factors. Younger age and working in Mexico increased farmworkers risk of experiencing WSH. Forward selection for gender discrimination added language which suggests that those who speak Purhépecha are at increased risk of WSH. Unfortunately, this work was not able to find other significant relationships between demographic and occupational factors and WSH. This might have been a consequence of small sample size or the limitations of variables collected.

4.5 Conclusion

The focus of this work was to evaluate the relationship between demographic and organizational factors with workplace sexual harassment (WSH).

The strengths of this study include our use of a dataset and invited participants. We used a quantitative approach to documenting these relationships by building logistic regression models. Our efforts support previous work with anecdotal findings. Our work included the participation of workers in Mexico, men farmworkers, and indigenous Purhépecha farmworkers. Our efforts support previous work revealing that women farmworkers, indigenous-language speakers, and farmworkers in Mexico suffer

disproportionately in comparison to farmworkers in the United States, male farmworkers, and those that speak English and Spanish.

Limitations of this work include our small sample size and limited geographic representation. This sample included 197 farmworkers (119 women and 79 men). Though small, this sample size provided enough power to test for associations and interactions of interest. The workers were recruited in California and Michoacán, specific geographical regions in United States and Mexico that did not fully represent farmworkers as a whole. Though, this sample's demographic composition is similar to that found among national farmworker groups, we cannot generalize to greater population levels.

Our work provides statistical evidence to consider certain factors as relevant regarding WSH among farmworkers. These findings will help support those working in this field to help improve the response to and prevention of WSH in agriculture.

4.6 Funding and acknowledgments

We thank the farmworkers and organizations that made this study possible. In México, these included *La Confederación Nacional Campesina* (the National Women Farmworker Confederation), and *Red Solidaria de Derechos Humanos* (Solidarity Network for Human Rights) and faculty at the department of psychology at the Universidad Michoacana de San Nicolás de Hidalgo. In the US, these included *Líderes Campesinas* (Farmworker Women Leaders), *Alianza Nacional De Campesinas* (National Farmworkers Womens' Alliance), the Yolo County Housing Authority, and the Western Center for Agricultural Health and Safety (WCAHS). This research was funded partly by PIMSA (*Programa de Investigación en Migración y Salud*-The Migration and Health Research Program), the WCAHS (NIOSH grant U50 OH007550), and by National Institute for Occupational Safety and Health (NIOSH) Training Grant T42-OH008429.

4.7 Tables and figures

4.7.1 Table 1: Descriptive statistics (median, IQR, frequency, percent) for selected demographic factors of victims of gender discrimination (GD), hostile behavior (HB), unwanted sexual attention (USA), and quid pro quo (QPQ) workplace sexual harassment type among farmworkers (n=197)

Table 1: Descriptive statistics (median, IQR, frequency, percent) for selected demographic factors of victims of gender discrimination (GD), hostile behavior (HB), unwanted sexual attention (USA), and quid pro quo (QPQ) workplace sexual harassment type among farmworkers (n=197)						
Factors		GD (n=125)	HB (n=120)	USA (n=120)	QPQ (n=20)	Total (n=197)
Age [y]	Median	41	34	32	33	34
	IQR	30-53	25-43	26-43	25-43	27-46
Gender - n (%)	Men	54 (43)	48 (40)	45 (38)	6 (30)	24 (33)
	Women	71 (57)	72 (60)	75 (63)	14 (70)	48 (67)
Country - n (%)	United States	56 (45)	49 (41)	50 (42)	9 (45)	97 (49)
	Mexico	69 (55)	71 (59)	70 (58)	11 (55)	100 (51)
Civil status - n (%)	Married	86 (69)	79 (66)	77 (64)	13 (65)	134 (68)
	Other (single, open union, widowed)	39 (31)	41 (34)	43 (36)	7 (35)	63 (32)
Family crew - n (%)	Family in crew	79 (63)	78 (65)	80 (67)	14 (70)	130 (66)
	No Family in crew	46 (37)	42 (35)	40 (33)	6 (30)	67 (34)
Education - n (%)	0-3 Years of Education	18 (14)	16 (13)	18 (15)	3 (16)	28 (14)
	4-7 Years of Education	38 (30)	39 (33)	38 (32)	6 (32)	62 (32)
	8-11 Years of Education	38 (30)	36 (30)	35 (29)	6 (32)	58 (30)
	12 Years Ed, Trade Ed, College	31 (25)	29 (24)	28 (24)	4 (21)	48 (24)
Language - n (%)	Spanish	108 (86)	105 (88)	103 (86)	19 (95)	178 (90)
	English	1 (1)	1 (1)	1 (1)	0 (0)	1 (1)
	Purhépecha	16 (13)	14 (12)	16 (13)	1 (5)	17 (9)
Birthplace - n (%)	United States	11 (9)	11 (9)	9 (8)	3 (15)	19 (10)
	Mexico	114 (91)	109 (91)	111 (93)	17 (85)	178 (90)
Pay level - n (%)	Below	78 (62)	75 (63)	77 (64)	15 (75)	114 (58)
	Above	47 (38)	45 (37)	43 (36)	5 (25)	83 (42)
Designated WSH report receiver - n (%)	Personnel Exists	101 (81)	96 (80)	98 (82)	16 (80)	160 (81)
	Does not exist	24 (19)	24 (20)	22 (18)	4 (20)	37 (19)
Natural heterosexual myth acceptance - n (%)	Agrees with myth	20 (16)	21 (18)	17 (14)	0 (0)	29 (15)
	Does not agree with myth	105 (84)	99 (83)	103(86)	20 (100)	168 (85)

*Pay level for Michoacán is split at the median as <200 = Below and 201+ = Above in daily pesos. Pay level for California is split at the median as <11999 = Below and 12000+ = Above in annual dollars.

4.7.2 Table 2: Spearman Correlation Coefficients of selected demographic, organizational, and sexual harassment exposure variables among 197 surveyed farmworkers

Table 2: Spearman Correlation Coefficients of selected demographic, organizational, and sexual harassment exposure variables among 197 surveyed farmworkers.														
	Gender discrimination	Hostile behavior	Unwanted sexual attention	Quid pro quo	Country	Gender	Civil status	Age	Family crew	Education	Language	Birthplace	Myth acceptance	Pay group
Hostile behavior	0.71*													
Unwanted sexual attention	0.67*	0.66*												
<i>Quid pro quo</i>	0.22*	0.17*	0.23*											
Country	0.12	0.21*	0.19*	0.03										
Gender	-0.1	-0.01	0.05	0.07	-0.01									
Civil status	-0.02	0.06	0.1	0.02	0.35*	0.31*								
Age	-0.16*	-0.14*	-0.18*	-0.06	-0.28*	-0.08	-0.29*							
Family crew	-0.08	-0.03	0.018	0.03	0.28*	0.1	0.08	-0.04						
Education	0.02	0.01	-0.04	-0.02	-0.32*	0.17*	0.02	-0.27*	-0.25*					
Language	0.19*	0.13*	0.20*	-0.03	0.32*	-0.24*	-0.07	-0.06	0.1	-0.20*				
Birthplace	0.04	0.02	0.09	-0.06	0.26*	-0.09	-0.03	0.13	-0.02	-0.21*	0.04			
Myth acceptance	0.05	0.10	-0.02	-0.14	0.24*	-0.02	0.05	0.07	0.21*	-0.17*	0.02	0.09		
Pay	0.08	0.06	0.02	-0.07	-0.09	-0.21*	0.21	0.07	-0.03	0.01	-0.10	-0.01	-0.10	
Designated report receiver	0.01	0.04	-0.01	0.01	-0.02	0.04	-0.05	0.04	0.10	-0.04	-0.01	0.03	0.06	-0.22*

$r_s^* = p < 0.05$

4.7.3 Table 3: Logistic regression analysis: Four-variable Model, Dependent Variable= gender discrimination

Table 3: Logistic regression analysis: Four-variable Model, Dependent Variable= gender discrimination							
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds Ratio	95% CI
Intercept	1	12.3696	286.0	0.0019	0.9655	235534.3	
Age	1	-0.0254	0.0117	4.6818	0.0305	0.975	(0.95, 0.99)
language Spanish	1	-10.7213	286.0	0.0014	0.9701	0.000	(<0.0, >999)
language Other	1	-22.9709	409.8	0.0031	0.9553	0.000	(<0.0, >999)
language Purhépecha	1	-8.7714	286.0	0.0009	0.9755	0.000	(<0.0, >999)
Country Mexico	1	0.1205	0.3292	0.1339	0.7144	1.128	(0.59, 2.15)
Gender Women	1	-0.4223	0.3346	1.5931	0.2069	0.656	(0.34, 1.26)

4.7.4 Table 4: Logistic regression analysis: Three-variable Model, Dependent Variable= hostile behavior

Table 4: Logistic regression analysis: Three-variable Model, Dependent Variable= hostile behavior							
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds Ratio	95% CI
Intercept	1	0.9293	0.5688	2.6690	0.1023	2.533	
Country Mexico	1	0.7615	0.3141	5.8794	0.0153	2.142	(1.16, 3.96)
Age	1	-0.0200	0.0115	3.0072	0.0829	0.980	(0.96, 1.00)
Gender Women	1	-0.1300	0.3124	0.1732	0.6772	0.878	(0.48, 1.62)

4.7.5 Table 5: Logistic regression analysis: Three-variable Model, Dependent Variable= unwanted sexual attention

Table 5: Logistic regression analysis: Three-variable Model, Dependent Variable= unwanted sexual attention								
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Odds Ratio	95% CI
Intercept		1	0.7193	0.5623	1.6361	0.2009	2.053	
Country	Mexico	1	0.6292	0.3122	4.0620	0.0439	1.876	(1.02, 3.46)
Gender	Women	1	0.2144	0.3072	0.4871	0.4852	1.239	(0.68, 2.26)
Age		1	-0.0189	0.0114	2.7446	0.0976	0.981	(0.96, 1.00)

Conclusion:

This work summarizes efforts to evaluate WSH in agriculture. Our procedures were guided by a mixed-methods sequential exploratory design that began with focus groups, lead to interviewing participants using a cross-sectional survey, and ended with using the data in logistic regression to predict the probability of experiencing WSH given demographic and occupational factors. Novel study inclusions were sampling among both men and women, inclusion of indigenous farmworkers, quantitative data collection on WSH, and the transcultural comparison between Mexico and the United States. This design allowed us to investigate from the perspective of both the participant and the researcher. Focus groups allowed participants to express themselves and document their testimonies. Previous anecdotal evidence suggests certain demographic and occupational factors increase the risk of sexual harassment. Surveys allowed us to collect quantitative information on demographic and occupational factors suspected to influence WSH in anecdotal findings. We used survey data in logistic regression to investigate each factor's influential magnitude and direction on the risk of WSH.

Focus group findings have an impact beyond our efforts but must be considered with strengths and weaknesses in mind. Findings revealed that although both men and women faced WSH, women's experiences were more frequent and more severe. WSH caused both men and women to experience reduced workplace happiness, greater anxiety, and greater discomfort. Strengths of focus groups included (1) the transcribing of audio recordings by hand and by the researchers who conducted the interviews, (2) the human dimension offered to impersonal data, and (3) the deepened understanding and explanation of data. Limitations included the possible self-censoring of participants that lead to "group thinking" in focus group discussions vs. the insight that might have occurred in one-on-one qualitative interviews. The impact of these focus group findings is great because it provides materials and quotes for public relations, publications, and presentations.

Survey findings also have an impact beyond our efforts. Findings revealed that WSH occurs frequently, is perpetrated by both co-workers and leadership, and that the most common form is gender

discrimination against women. Farmworkers believed in many myths that help perpetuate WSH and victim blaming. Strengths of surveys included our cross-sectional design that was good for (1) descriptive analyses, (2) generating hypotheses and (3) for studying multiple outcomes and exposures. Limitations of surveys included our inability to measure incidence and possible bias from self-selected participants and recall bias. Furthermore, these WSH surveys are important because the public health implications include providing a harassment prevalence for assessing the burden and for planning and allocating health resources.

Models provide new quantitative insight on influential factors however, limitations in sample size hindered our analysis. Results identify age, language, and country of work as factors that influence a person's vulnerability to WSH. For example, our analysis provided evidence that non-English speakers, younger aged workers, and workers in Mexico had a higher likelihood of experiencing WSH than their counterparts. Strengths of our model building include (1) the use of behavior-based survey items and (2) quantifying factors previously considered as anecdotal evidence. Limitations include our small sample size that did not allow us to evaluate potential effect modification, confounding, and subgroup effects. Generalizations were also hindered by our limited geographic scope. Regardless of these shortcomings, models have a great impact because they aid in public health dissemination efforts with insight on the directions and magnitudes of factor associations.

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