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Job Characteristics and Work Safety Climate among North Carolina Farmworkers with H-2A Visas

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Abstract

Migrant farmworkers are a vulnerable population. Migrant farmworkers with H-2A visas are the only agricultural workers with temporary work permits. Little research has directly focused on the job characteristics and work safety of workers with H-2A visas. This analysis (1) describes their personal and job characteristics, job hazards, and stressors; (2) describes their perceived work safety climate; and (3) examines associations of perceived work safety climate with job characteristics, job hazards, and stressors. Data are from a cross-sectional component of a larger study of farmworker pesticide exposure; in 2012 interviews were conducted with 163 migrant farmworkers with H-2A visas in North Carolina. The sample was limited to men aged 30 to 70 years. Migrant farmworkers with H-2A visas experience the same hazards as do other farmworkers. Their mean score on the perceived work safety climate scale 25.5 (SD=3.7) is similar to that of other farmworkers and other immigrant workers. Perceived work safety climate is associated with hours worked per week ($p=0.02$), precarious employment ($p<0.001$), planting and cultivating ($p=0.002$), topping tobacco ($p=0.0012$), and stress ($p=0.02$). Perceived work safety climate is particularly important for migrant farmworkers with H-2A visas because their labor contracts limit their options to change employers. Additional research on the status of work safety climate among agricultural workers is needed, as well as on the factors that affect work safety climate and on the safety characteristics that are affected by work safety climate. Policy changes that lead to improved work safety climate should be considered.

Keywords

occupational safety; agricultural safety; temporary workers; work safety climate

Introduction

Farmworkers constitute a vulnerable population in the United States. Most farmworkers are immigrants from Mexico and other Latin American countries; about half are undocumented; many do not speak English, and most have little formal education.¹ Farmworkers experience high rates of occupational injury but have limited access to formal health care.^{2–5} Migrant farmworkers with H-2A visas have special protections (8 U.S.C. § 1101(a)(15)(H)(ii) (a)). They have legal documents to work in the US. They are guaranteed an hourly wage greater than the minimum wage, a minimum average of 35 hours of work per week, housing, and round-trip transportation costs to their home communities. They are provided health protection through the Workers Compensation system; Jamaican workers with H-2A visas also have medical coverage from their home country. In North Carolina (NC), many farmworkers with H-2A visas are represented by a labor union, the Farm Labor Organizing Committee (FLOC) (<http://www.floc.com/wordpress/>). Research in NC has consistently found that farmworkers with H-2A visas are more likely to receive pesticide safety training, have better housing and field sanitation conditions, and not experience wage theft.^{6–10} At the same time, farmworkers with H-2A visas remain vulnerable. They generally are allowed to work only for the single employer who recruits them. If they do not fulfill at least half of their contract period, they must pay their transportation costs. Advocates argue that the control and intimidation exerted over these workers by their employers limits the workers' ability to voice concerns over unsafe working conditions.^{11–12}

Work safety climate is associated with occupational health outcomes.^{13–14} It is an indicator of how workers perceive their supervisor values safety over production. Work safety climate is associated with occupational safety and health outcomes in different immigrant worker populations, including manufacturing,^{15–18} construction,¹⁹ and agriculture.²⁰ It is particularly important for immigrant workers, including farmworkers. Immigrant workers often feel little control over their work environments.^{21–23} They seldom complain about unsafe work environments due to fear of losing their jobs, harassment from authorities, or deportation, if they lack appropriate documentation.²⁴ Therefore, faced with an unsafe work climate, immigrant workers tend to ignore risk and appropriate safety behaviors to conform to the expectations of their employers.^{23,25} The willingness of immigrant workers to accept unsafe work conditions is bolstered by a belief system in which men are expected to accept danger and they are expected to act as if they will not be harmed by exposure to hazards.^{19,21,26–27}

Limited research has examined work safety climate among farmworkers. Examining a sample of farmworkers that included individuals with and without H-2A visas, Arcury and colleagues²⁰ found these farmworkers perceived their work safety climate to be poor. Level of perceived work safety climate was related to greater musculoskeletal discomfort and greater risk of working while injured or ill. Whalley and colleagues⁸ report that 15% of adult farmworkers stated that their supervisors “are only interested in doing the job fast and cheaply” (the final item in the Gillen et al.²⁸ Perceived Work Safety Climate Scale). Arcury and colleagues²⁹ report very low perceived work safety climate among youth farmworkers aged 10 to 17; in response to the same item in the Perceived Work Safety Climate Scale,²⁸

almost 40% gave the response that their supervisors “are only interested in doing the job fast and cheaply.”

The goal of this analysis is to expand understanding of the importance of perceived work safety climate among farmworkers by focusing on a sample of NC farmworkers who have H-2A visas. The H-2A visa program is the only program that allows agricultural employers to bring foreign nationals to the United States to fill temporary agricultural jobs (<http://www.uscis.gov/working-united-states/temporary-workers/h-2a-agricultural-workers/h-2atemporary-agricultural-workers>). The only national study of farmworkers in the US, the National Agricultural Workers Survey or NAWS,¹ excludes workers with H-2A visas. Therefore, national data are not available that speak to farmworkers with H-2A visas. NC is a major destination for farmworkers with H-2A visas; approximately 10,000 farmworkers with H-2A visas worked in NC in 2012 (http://www.foreignlaborcert.doleta.gov/pdf/h_2a_temp_agricultural_visa.pdf), and in 2013 NC accounted for one-quarter of all farmworkers with H-2A visas in the country (http://www.foreignlaborcert.doleta.gov/pdf/h_2a_selected_statistics.pdf). Specifically, for farmworkers with H-2A visas in NC, this analysis (1) describes their personal and job characteristics, job hazards, and stressors; (2) describes their perceived work safety climate; and (3) examines associations of perceived work safety climate with job characteristics, job hazards, and stressors.

Methods

This analysis uses data collected by the PACE4 project (R01 ES008739) in July, 2012. PACE4 uses a community-based participatory research approach with Latino communities to examine the cognitive and neurological outcomes of pesticide exposure. The primary farmworker community partner is the NC Farmworkers Project (Benson, NC). PACE4 was reviewed and approved by the Wake Forest School of Medicine Institutional Review Board. All participants gave signed informed consent.

Participants

Participants for PACE4 were men aged 30 to 70 years. Workers younger than age 30 years were excluded from the sample due to the larger study’s focus on cognitive and neurological outcomes. All participants self-identified as Latino or Hispanic and almost all spoke Spanish as their primary language. Participants had to be currently employed as farmworkers and to have worked in agriculture for at least three years. Participants were recruited in counties surrounding the town of Benson, the location of the NC Farmworkers Project, in the east-central region of the state. These counties include Harnett, Johnston, and Sampson. NC Farmworkers Project staff approached the farmworker camps that they served. They explained the project to the residents of each camp, including the inclusion and exclusion criteria, time commitments and incentives, and asked for volunteers. Volunteers were screened to ensure that they met the inclusion criteria. A total of 235 farmworkers completed the baseline interviews in May 2012, and 171 completed follow-up interviews in July 2012 (Contact 2) which contained questions on job characteristics and work safety climate. Of these 171 participants, 163 had H-2A visas and are included in this analysis.

Data Collection

The baseline questionnaire included items to construct personal characteristic measures. The Contact 2 questionnaire included items to construct measures of job characteristics, job hazards, stressors, and perceived work safety climate. The questionnaires were developed in English and translated into Spanish. When possible, existing Spanish items and scales were used. The Spanish and English versions were checked for comparable meaning for each item, and item wording was adjusted as needed. The Spanish versions of the questionnaires were each pre-tested with several native Spanish speakers, and final corrections were made. Study data were collected and managed using Research Electronic Data Capture (REDCap) electronic data capture tools hosted at Wake Forest School of Medicine.³⁰ REDCap is a secure, web-based application designed to support data capture for research studies.

Interviewers included native Spanish speakers who completed training that addressed questionnaire content and proper technique for conducting interviews. Baseline and contact 2 interviews were conducted in the farmworker camps in which the participants lived. Interviews were conducted in private; neither crew leaders nor employers were present when the interviews were conducted.

Measures

Personal characteristics included age (30 to 34 years, 35 to 44 years, 45 years and older), married or living as married, education (0 to 6 years, 7 to 11 years, 12 or more years), country of birth, and dominant language. Job characteristics included measures of work schedule, compensation, and job control. Work schedule included usual hours worked per week (less than 35, 35 to 40, 41 to 48, more than 48), and time usually start work (before 7:00 am, 7:00 am or later). Compensation measures indicated whether the participants were paid a piece rate, whether they had a problem of not being paid what they had earned, and whether they received the benefits of health insurance, paid sick leave, paid vacation, paid holidays, and a retirement plan. Job control measures **assessed** whether participants felt they could influence decisions about their work schedule, hours worked per week, and wages, as well as their sense of precarious employment. Precarious employment includes five items developed by Vives and colleagues^{31–32} with which the participants agree (1) or disagree (0). A summary measure is based on whether participants agreed with none of the items or at least one of the statements. Job task was limited to the 154 of 163 participants who had performed farm work in the 3 days before the interview. The three tasks were planting or cultivating, topping tobacco (removing the flower from the plant by hand), and harvesting or packing. A participant could do more than one task in the 3 days before the interview.

Job hazards included indicators of pesticide exposure, use of personal protective equipment, and poor pesticide safety behaviors. These measures were developed by the investigators based on their earlier research.^{6,8,33–35} Other potentially important job hazards, such as heat stress, musculoskeletal risks, and respiratory risks, are not addressed in this analysis as they were not within the purview of the larger PACE4 study. Pesticide exposure measures assessed whether in the previous 3 days the participants had mixed, loaded or applied a pesticide, worked within view of a field where pesticides were being applied, and worked in an area where pesticides had been applied in the previous 7 days. (The 3 day limit was

selected because the non-persistent pesticides to which workers are exposed would be metabolized within this period). An additional pesticide exposure measure was the number of times participants washed their hand with soap per day at the worksite. Use of personal protective equipment included whether participants used work gloves or a rain suit in the previous week (both gloves and rain suits are worn by farmworkers to reduce exposure to nicotine when working in tobacco³⁶). Poor pesticide safety behaviors included whether the participants had worked in the past week wearing wet clothes, wet shoes, short sleeve or sleeveless shirt, no hat, shorts, no shirt, sandals or barefoot, soiled work clothes. These measures are based on the investigators' earlier research.^{6,8,33–35}

Stressors are assessed with the 17-item self-report instrument that assesses exposure to stressors inherent in migrant farm work for adults.³⁷ Items tap aspects of migrant farm work, such as perceived discrimination, acculturative stress, poor working conditions, and physically demanding work. Respondents rate each item that they have experienced on a 5-point scale ("Have Not Experienced (0)" to "Extremely Stressful (4)"). Scores are obtained by summing the scores for the 17 items for a possible range of 0 to 68. Higher scores reflect a higher level of stress. The mean score in this study was 16.1, with a standard deviation of 6.3, and a Cronbach's alpha of 0.68.

Participants were asked to evaluate their current farm work employers with the 10-item Perceived Safety Climate Scale.²⁸ This scale has been used in research with other immigrant workers, including farmworkers.²⁰ Nine of the items in this scale used a four-point Likert format (strongly agree (4), agree (3), disagree (2), strongly disagree (1)). The tenth item included three response categories (1–3). Items were summed. Possible values for the scale ranged from 10 to 39, with higher values indicating better work safety climate. The mean score in this study was 25.5, with a standard deviation of 3.7, and a Cronbach's alpha of 0.63.

Analysis

Descriptive statistics (counts, percentages or mean, standard deviation as appropriate) were calculated for participant characteristics of interest. One way analysis of variance (ANOVA) was used to assess the bivariate associations between participant job characteristics, job hazards, and stress, and perceived work safety climate; analyses were not conducted for independent measures without variability. All analyses were performed using SAS 9.4 (SAS Institute, Cary, NC) and p-values less than 0.05 were considered statistically significant.

Results

Personal and Job Characteristics

By design, all participants were aged 30 years and older, with about one-third aged 30 to 44 (36.2%) and 35 to 44 (37.4%), and one-quarter aged 45 and older (26.4%) (Table 1). Almost all were married. Most (92.7%) had fewer than 12 years of education. All were from Mexico, and Spanish was their dominant language.

The majority of the participants worked more than 40 hours per week, with 27.6% working 41 to 48 hours and 31.9% working more than 48 hours per week (Table 1). A few (8.6%)

worked fewer than 35 hours per week. The majority started work before 7:00 am (59.5%). All but three of the participants were paid by the hour. In addition, 24.5% were also paid a piece rate, either by the barn (for tobacco) or by the bucket (for cucumbers and sweet potatoes). Almost none (1.2%) reported a problem being paid the money they had earned. Few reported any health benefits, such as health insurance (18.4%) or paid sick leave (6.8%). Workers indicated little control at work in terms of work schedule (4.3%), number of hours worked each week (3.1%), or wages (none). Few felt aspects of their job were precarious: 35.0% stated that they had felt concerned about their safety on their job, but were afraid to voice their concern; 7.4% felt defenseless against unfair treatment on the job, and 11.0% felt they had been treated in a discriminatory or unjust way on the job. Participants were involved in planting or cultivating (55; 35.7%), topping tobacco (107; 69.5%), and harvesting or packing (67; 43.5%) in the 3 days prior to the interview.

Work Hazards

Few (6.5%) of the participants had mixed, loaded or applied pesticides, but most had worked within view of a field where pesticides were being applied (57.4%), or had worked in an area where pesticides had been applied in the previous 7 days (64.2%) (Table 2). They had washed their hands with soap an average of 2.8 times per day at the work site. Most wore work gloves (75.7%) and a rain suit (73.0%). While most participants had worked in wet clothing (62.3%) and wet shoes (53.3%), few (0.7% to 3.3%) had engaged in other behaviors that reduced pesticide safety (e.g., wearing a short sleeve or sleeveless shirt; working in sandals or going barefoot).

The most common stressors among the participants were related to separation from family (Table 2). For example, most worried about their children's education (85.9%) and found it difficult to be away from family members (85.3%). About one-in-five were concerned with migration; 20.9% found migrating to the US to be difficult, and 20.3% worried about being deported. Almost none of the participants agreed with the work-related stressors.

Perceived Work Safety Climate

A majority of the participants agreed with most of the items in the Work Safety Climate scale (Table 3). The great majority perceived workers' safety to be very important to management (85.9%), that they were regularly made aware of dangerous work practices (84.7%), and that workers have almost total control of their personal safety (78.5%). Most stated that workers received safety instructions when hired (68.1%) and that proper safety equipment is always available (55.2%). Fewer than half perceived that taking risks was not part of their job (49.1%), that they attended regular safety meetings (39.3%), and that they are regularly praised for safe conduct (33.7%). Two-thirds (66.9) felt that the possibility of being injured at work in the next 12 months was likely. Finally, although 21.6% felt that their supervisors were only interested in doing the job fast and cheap, 50% felt that supervisors do as much as possible to make the job safe. The mean score for the Perceived Work Safety Climate scale was 25.5 (standard deviation (SD) = 3.7).

Association with Perceived Work Safety Climate

The number of hours participants worked was directly related to perceive work safety climate (Table 4). The mean score among those working fewer than 35 hours per week was 24.71 (SD = 3.56), while among those working more than 48 hours per week it was 26.76 (SD=3.78). The mean score was lower among those who reported one or more precarious employment characteristics (24.39; SD=3.49), versus those who reported no precarious characteristics (26.32; SD 3.58). Those who were planting or cultivating had lower perceived work safety climate (24.28; SD=3.81) than those who were not (26.13; SD=3.34); those who were topping had higher perceived work safety climate (26.09; SD=3.31) than those who were not (24.09; SD=3.90). Those with a stress score of 10 or less had greater perceived work safety climate (26.84; SD=3.99), than those with stress scores of 11 to 19 (25.60; SD=3.48) or 20 or more (24.52; SD=3.51). Perceived work safety climate did not have a statistically significant association with the time participants started work, if they were paid piece rate, the task harvesting and packing, pesticide exposure, the number of times per day they washed their hands, use of personal protective equipment, or pesticide safety behavior.

Discussion

Farmworkers with H-2A visas face the same work and personal hazards as do all migrant farmworkers. They work in one of the nation's most hazardous industries.³⁸ They receive low pay and few benefits.¹ They have limited access to health care when they need it.⁵ They live in substandard housing, even when their housing is somewhat better than that of other migrant farmworkers.⁷ They are socially isolated in remote locations within rural communities. This isolation is amplified because few speak English, and members of the rural communities in which they work seldom speak Spanish. They are separated from their families for extended periods. At the same time, in NC studies directly comparing migrant farmworkers with H-2A visas to those lacking these visas, migrant farmworkers with H-2A visas are more likely to receive pesticide safety training, to have basic field sanitation facilities, such as water for washing and toilets, to have somewhat better housing, and not to experience wage theft.⁶⁻¹⁰

This research expands what is known about the job characteristics and work safety climate of migrant farmworkers with H-2A visas. Data on workers with H-2A visas is limited as the NAWS excludes these workers.¹ As is common among agricultural workers, the work schedule for farmworkers with H-2A visas is often harsh; more than half work more than 40 hours each week, with almost one-third working more than 48 hours each week; and almost three in five starts work before 7:00 am. Data collection for this analysis was completed in July, before the peak of the tobacco harvest in August when farmworkers often work 7-days per week. As documented elsewhere,⁹ wage theft is seldom a problem for farmworkers with H-2A visas. However, a quarter report that their compensation is in part based on piece rate work; piece rate work increases the likelihood of ignoring safety and the likelihood of experiencing injury.³⁹⁻⁴⁰

Not surprisingly, as temporary workers, farmworkers with H-2A visas seldom have any type of job benefits. The lack of health insurance should be interpreted in light of their

employers' formal responsibility to provide health care when they are injured at work, and the reticence of farmworkers to report injury or illness to their employers for fear that it will affect their current and future employment.⁵ Farmworkers with H-2A visas report little job control yet generally do not see their employment as precarious. However, one-third state they would not voice a concern about job safety.

The types of pesticide exposure these farmworkers report are similar to those reported by other farmworkers in NC and elsewhere. However, they report safer behaviors in terms of washing hands and not wearing inappropriate clothing at work (e.g., short sleeve shirt, sandals, soiled work clothes).^{8,33}

The stressors reported by farmworkers with H-2A visas are related to family issues rather than work. They are concerned about their children and other family members, and about being away from friends; some are stressed about migration, being deported, and isolation; however, few are concerned about their work. Farmworkers understand that they are here to work and that this work supports their families.^{41–42} But separation from family has been shown to be a stressor for migrant farmworker men,^{43–44} and this stressor affects perceptions of work safety. Finally, it is interesting to note that 13% of the participants found that “not having a permit to work in this country” to be a stressor. This may indicate that these migrant workers are not knowledgeable about the rights and protections that the H-2A visa provides.

The overall work safety climate of migrant farmworkers with H-2A visas maybe somewhat better than that of other farmworkers and other immigrant workers. The mean score for these farmworkers with H-2A visas was 25.5 (SD=3.7). Comparisons with other migrant farmworkers are difficult as samples which report work safety climate have generally included some workers with H-2A visas,²⁰ or are limited to youth farmworkers aged 10 to 17 years.²⁹ For example, among a sample of 300 NC migrant farmworkers (63% of whom had H-2A visas), the mean perceived work safety climate score was 26.6 (SD=4.0) (Arcury et al. 2012d),²⁰ which is higher than the participants in the current study; among a sample of 89 youth farmworkers the mean perceived work safety climate score was 17.9 (after adjustment to the same scale range). In two studies of immigrant male Latino construction workers, the mean perceived work safety climate score was 23.0 (SD=5.3) in a sample of general construction workers⁴⁵ and 26.5 (SD = 5.6) in a sample of roofers.⁴⁶

Perceived work safety climate is related to job characteristics and hazards among farmworkers with H-2A visas, as is the case in research with other immigrant workers. It is interesting that those working more hours reported greater perceived work safety climate, and at the same time those who agreed with any precarious employment characteristic had low perceived work safety climate. In this group of low-income and vulnerable workers, those who are working longest and feel more secure in their employment may report positive safety characteristics. In other research on work organization among Latino immigrant workers (including farmworkers), a sense of perceived supervisor control increases the workers' sense of safety.^{47–48} Those topping tobacco have a higher work safety climate score (26.09) than those planning and cultivating (24.28) and those harvesting and packing (25.68). Topping tobacco is an activity that is conducted between planting and

harvesting; perhaps, the perception of safety increases and then decreases. This pattern is opposite to that reported for depression among farmworkers,⁴⁹ which decreases from the beginning to the middle of the agricultural season, and then increases from the middle to the end of the agricultural season. Finally, stress among the farmworkers reflects separation from family much more than work characteristics, yet stress is inversely related to work safety climate. Among immigrant workers in construction and manufacturing, work safety climate is related to the use of personal protective equipment.^{1,45} Arcury and colleagues²⁰ show that perceived work safety climate is related to greater musculoskeletal discomfort and greater risk of working while injured or ill among farmworkers.

This analysis suggests policies for temporary visa programs that could improve the health, safety, and dignity of workers with temporary visas. First, processes that improve the contact of migrant workers with their families will improve mental health⁴³ and may improve perceived work safety climate. Many migrant farmworkers now have access to cellphones, but connectivity in remote rural areas can be limited. The cost of cellphone use can also prohibit contact with families. Providing migrant farmworker camps with internet access so that they can use on-line services (e.g., Skype) to communicate with their families may improve occupational safety. An even more than robust approach to addressing worker separation from family would be encouraging and supporting workers to bring family members with them. Current H-2A regulations allow workers' families to accompany them, but family members are not allowed to work and they must pay their own transportation costs. A second area of policy is improved safety training. This training should teach workers they should follow safety and sanitation procedures even when their employers are perceived to provide a safe work environment. Although employers are well-intentioned, workers should be alert to safety. Another policy is ensuring that current regulations related to work safety are enforced.⁹ Farmworkers in NC with H-2A visas are more likely to receive pesticide safety training, have better housing and field sanitation conditions, and not experience wage theft.⁶⁻¹⁰ Robinson and colleagues⁹ argue that greater safety for farmworkers with H-2A visas is a function of the higher standard and enforcement of regulations. Finally, occupational safety policy should include a process for evaluating regulations to ensure that they are achieving their objectives.

The results of this project should be interpreted in light of the research limitations. The data are cross-sectional; therefore, causality cannot be determined. The participants were recruited from one area of a single state in a single year, limiting the generalizability of the results. Further limiting generalizability is the exclusion of younger farmworkers, those less than 30 years, from the sample. The number of work characteristics on which data were collected was limited. However, the study does include a large number of migrant farmworkers with H-2A visas from who substantial information was collected. Finally, this research does not address issues of control and intimidation that advocates argue are exerted by employers over farmworkers with H-2A visas.¹¹⁻¹² The investigators have anecdotal examples of workers with H-2A visas who have told them that they have been warned by their employers not to talk to strangers, particularly researchers. We have also seen the fear in their faces when we try to speak with them.

Conclusions

Migrant farmworkers with H-2A visas experience the same hazards as do other farmworkers, and perceived work safety climate is associated with safety hazards and behaviors. Perceived work safety climate is particularly important for all migrant farmworkers, and even more so for those with H-2A visas because their labor contracts limit their options to change employers. Additional research on work safety climate among agricultural workers is needed; this research should address the factors that affect work safety climate and how work safety climate is related to safety characteristics and behaviors of farmworkers. Policy changes that lead to improved work safety climate should be considered.

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Table 1

Personal and Job Characteristics of Farmworkers with H-2A Visas, Eastern North Carolina, 2012 (N =163).

Personal and Job Characteristics	n	%
Personal Characteristics		
Age		
30 to 34 years	59	36.2
35 to 44 years	61	37.4
45 years and older	43	26.4
Married/living as married	157	96.3
Education		
0 to 6 years	66	40.5
7 to 11 years	85	52.2
12 or more years	12	7.4
Country of Birth – Mexico	163	100.0
Dominant Language – Spanish	163	100.0
Job Characteristics		
Work Schedule		
Hours Worked Per Week		
Less than 35	14	8.6
35 to 40	52	31.9
41 to 48	45	27.6
More than 48	52	31.9
Time Usually Start Work		
Before 7:00 am	97	59.5
7:00 am or later	66	40.5
Compensation		
Paid Piece Rate	40	24.5
Problem with not being paid all of the money you have earned	2	1.2
Benefits		
Health insurance	30	18.4
Paid sick leave	11	6.8
Paid vacation, paid holidays, retirement plan	0	0.0
Job Control		
Decisions		
Work schedule	7	4.3
Hours worked per week	5	3.1
Influence wages	0	0.0
Precarious Employment		
Concerned about your safety on your job, but were afraid to voice your concern	57	35.0
Felt defenseless against unfair treatment directed toward you on your job	12	7.4
Afraid of being fired, even though you did nothing wrong	18	11.0
Treated in a discriminatory or unjust way on your job	3	1.8

Personal and Job Characteristics	n	%
Made to feel that you could be easily replaced by a boss or supervisor	8	4.9
Precarious Employment Summary		
0	95	58.3
1 or more	68	41.7
Tasks in the Previous 3 Days*		
Planting or cultivating	55	35.7
Topping tobacco	107	69.5
Harvesting or packing	67	43.5

* For the 154 participants who had performed farm work in the previous 3 days; participants could be engaged in more than one task.

Table 2

Job Hazards and Stressors Farmworkers with H-2A Visas, Eastern North Carolina, 2012.

Job Hazards and Stressors	n	%
Work Hazards (n = 154 farmworkers who had performed farm work in the previous 3 days)		
Pesticide Exposure in Previous 3 Days		
Mix, load or apply a pesticide, sucker dope or yellowing agent	10	6.5
Work within view of a field where pesticides were being applied *	85	57.4
Work in an area where pesticides had been applied in the previous 7 days *	95	64.2
Number of times washed your hands with soap per day at the worksite (mean/sd)	2.8	1.7
Use of Personal Protective Equipment (PPE) in Past Week		
Work gloves *	112	75.7
Rain suit *	108	73.0
Either work gloves or a rain suit *	129	87.2
Poor Pesticide Safety Behaviors: Wore in the Past Week		
Wet clothes	96	62.3
Wet shoes	82	53.3
Short sleeve or sleeveless shirt	5	3.3
No hat	5	3.3
Shorts	3	2.0
No shirt	1	0.7
Sandals or going barefoot	1	0.7
Soiled work clothes	1	0.7
Stressors (Somewhat, Moderately, or Extremely Stressful) (n = 163)		
I worry about my children's education	140	85.9
It is difficult to be away from family members	139	85.3
My life has become more difficult because my partner is not with me	107	65.6
I worry about who my children are spending time with	105	64.4
It is difficult to be away from friends	86	52.8
I worry about my relationship with my partner	58	35.6
Because I feel isolated, I find it hard to meet people	28	17.2
I find it difficult to talk about my feelings to other people	40	24.5
Migrating to this country was difficult	34	20.9
I worry about being deported	33	20.3
I worry about not having a permit to work in this country	21	12.9
Sometimes I have difficulty finding a job	16	9.8
Sometimes I have difficulty finding a place to live	14	8.6
I have experienced discrimination in this country	11	6.8
I do not get enough credit from other family members for the work I do	7	4.3
I have been taken advantage of by my employer, supervisor, or landlord	4	2.5
There is not enough water to drink when I am working	2	1.2
Sum of Stressors (mean/sd)	16.1	6.3

* missing 6 observations

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Table 3

Perceived Work Safety Climate, Farmworkers with H-2A Visas, Eastern North Carolina, 2012 (N =163).

Perceived Work Safety Climate Items	Agree or Strongly Agree	
	n	%
Workers' safety practices are very important to management	140	85.9
Workers are regularly made aware of dangerous work practices or conditions	138	84.7
Workers have almost total control over personal safety	128	78.5
Workers receive instructions on safety when hired	111	68.1
Proper safety equipment is always available	90	55.2
Taking risks is not a part of my job	80	49.1
Workers attend regular safety meetings	64	39.3
Workers are regularly praised for safe conduct	55	33.7
The possibility of being injured at work in the next 12 months is very likely	109	66.9
Overall safety climate assessment*:		
Supervisors do as much as possible to make my job safe	81	50.0
Supervisors could do more to make my job safe	46	28.4
Supervisors are only interested in doing the job fast and cheap	35	21.6
Total Work Safety Climate Score *		
Mean (SD)	25.5	3.7

* missing one observation

Table 4

Association of Job Characteristics, Job Hazards, and Stress with Perceived Work Safety Climate, Farmworkers with H-2A Visas, Eastern North Carolina, 2012 (N =163).

Job Characteristics, Job Hazards, and Stress	Perceived Work Safety Climate Score	p-value ^{\$}
	Mean (SD)	
Hours worked per week		0.02
Less than 35	24.71 (3.56)	
35 to 40	24.60 (3.32)	
41 to 48	25.42 (3.63)	
More than 48	26.76 (3.78)	
Time usually start work		0.49
Before 7:00am	25.68 (3.58)	
7:00am or later	25.28 (3.79)	
Paid Piece Rate		0.97
Yes	25.50 (3.93)	
No	25.52 (3.58)	
Summary Precarious Employment		<.001
0	26.32 (3.58)	
1 or more	24.39 (3.49)	
Tasks [*]		
Planting and Cultivating		0.002
Yes	24.28 (3.81)	
No	26.13 (3.34)	
Topping Tobacco		0.001
Yes	26.09 (3.31)	
No	24.09 (3.90)	
Harvesting and Packing		0.43
Yes	25.21 (3.83)	
No	25.68 (3.45)	
Hazards [*]		
Pesticide Exposure ⁺		0.40
Yes	25.34 (3.57)	
No	25.90 (3.76)	
Number of times washed hands with soap per day at the worksite		0.18
0	26.55 (3.46)	
1 or 2	25.96 (3.37)	
3 or more	25.13 (3.68)	
Personal Protective Equipment Use ⁺		
None	25.05 (3.46)	
Work gloves or rain suit	25.57 (3.65)	

Job Characteristics, Job Hazards, and Stress	Perceived Work Safety Climate Score	p-value [§]
	Mean (SD)	
Poor Pesticide Safety Behaviors		0.38
0	25.92 (3.62)	
1	25.88 (4.44)	
2+	25.09 (3.33)	
Stress Score		0.02
10	26.84 (3.99)	
11–19	25.60 (3.48)	
20+	24.52 (3.51)	

* For subset of 153 farmworkers who had performed farm work in the past 3 days

⁺ missing observations: 6 for pesticide exposure and PPE

[§] p-value from one-way ANOVA