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Working in the Shadows: Safety and Health in Forestry Services in Southern Oregon

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Abstract

We conducted a small participatory survey to document occupational injuries and illnesses, medical treatment, wage issues, and general working conditions among 150 forest workers in southern Oregon who are mostly Spanish-speaking immigrants from Latin America. We used snowball sampling in administering the survey. Survey results showed a high rate of job-related injury among the workers who responded to our survey. Results also suggested that many forestry services contractors licensed in Jackson and Josephine counties may not always follow labor laws. The vast majority of workers surveyed reported being fearful of retaliation for reporting injuries. There were no differences in reported working conditions and wage issues between workers with H-2B visas and other workers in the sample. This finding suggests that current US labor and health and safety laws are not effectively protecting Oregon's forest workers, owing to forest workers' structural vulnerability—their low positioning in social structures supported by immigration and economic status—compounded by fear of retaliation. Immigration policies and enforcement practices that contribute to creating a labor system with these inherent vulnerabilities and power imbalances need to be further examined and changed.

Keywords

forest workers; occupational safety and health; labor laws; forest management; transnationalism

The deaths of two forestry services workers in separate on-the-job accidents in southern Oregon since November 2011, are testimony to the inherent dangers of this work. One young worker with little training was killed in a chainsaw accident, and the other was killed when the van in which he and his coworkers were riding was hit by another vehicle (Oregon Occupational Safety and Health Administration [OSHA] 2011, Pfeil and Freeman 2012). These fatalities are indicative of a much wider problem in the forestry services industry in this region. A growing body of literature has documented high injury and fatality rates, wage theft, and generally poor working conditions among forest workers in the United States. For example, forest workers in Oregon experience three times the rate of occupational injury and

illness of the workforce at large and 10 times the fatality rate (Bureau of Labor Statistics [BLS] 2011, Hayford 2013). Even these high rates are likely to underestimate the problem because of incentives that both workers and employers have to not report injuries (Azaroff et al. 2002, Ruser 2008, Sarathy 2012). To date, no studies have focused explicitly on occupational safety and health in the forestry services industry.

To begin to address this information deficit, the Northwest Forest Worker Center (NFWC) (a worker, harvester and environmental advocacy organization that was known as the Alliance of Forest Workers and Harvesters at the time of the survey) and the Labor Occupational Health Program (LOHP) at the University of California, Berkeley, partnered to conduct a small participatory study to document occupational injuries and illnesses, medical treatment options, wage issues, and general working conditions among immigrant, Spanish-speaking forestry services workers (henceforth, “forest workers”) in Jackson and Josephine counties, Oregon. These forest workers do manual labor to develop, maintain, or protect forested areas, including planting trees, implementing pest control, thinning and cutting brush and small trees, piling and burning brush, installing erosion control structures, and improving habitat. There are an estimated 6,400 forest workers in Oregon at the peak of the season (Oregon Employment Department 2014), and Jackson and Josephine counties are home to a relatively high concentration of them in the state.

Background

During the past two decades, the forestry services workforce in the Pacific Northwest has become predominantly Latino (Sarathy 2012). This demographic shift has been accompanied by a change in the social networks in which forest workers participate. Like workers in agriculture and other labor-intensive industries, Latino forest workers are part of a larger system of transnational migration in which migrants maintain ties to their communities of origin while simultaneously participating in the life of communities in the receiving country (Levitt and Jaworsky 2007). Transnationalism has many benefits for the people involved. It increases incomes for migrants, benefits communities and the overall economies of sending countries through the remittances that migrants send home, provides employers in receiving countries with low-cost labor, and provides tax revenues to the governments of receiving countries (Levitt and Jaworsky 2007).

Transnationalism has costs as well. Poorly educated workers with limited proficiency in English are pulled into this transnational economic system because of the economic circumstances in their home countries (Levitt and Jaworsky 2007). Yet while their labor is sought in the United States, once here the low positioning of these migrants within social structures increases their vulnerability to economic distress, occupational injury and illness, and social dysfunction and simultaneously decreases their ability to make political claims and participate in public policy decisions that directly affect their lives and livelihoods (Levitt and Jaworsky 2007, Quesada et al. 2011). In addition to poverty and low levels of education, this “structural vulnerability” derives from and is reinforced by immigration status (and the risk of deportation) and by societal indifference to or acceptance of the challenges low-income immigrant workers face (Quesada et al. 2011, Holmes 2013). Holmes (2013), for example, has demonstrated how Triqui-speaking (an indigenous people

of Oaxaca, Mexico) farm workers in Washington's Skagit Valley are positioned at the bottom of the social hierarchy in farm work and are therefore at greater risk of occupational injury and illness and of receiving inadequate medical care. Champlin and Hake (2006) have documented how US immigration policy has produced a labor force in the meatpacking industry with few workplace rights and little bargaining power. Sarathy (2012) has documented how limited media coverage of forestry services workers in southern Oregon, in comparison to that of loggers, reflects public indifference to the former and how that indifference reinforces the economic and social marginalization of forest workers.

Whereas few systematic studies of forest workers have been done, numerous studies documenting the experience of immigrant workers in agriculture, as well as in urban industries including meatpacking and food service, suggest that low-wage immigrant workers in labor-intensive occupations commonly experience wage theft (not getting overtime pay, being paid less than minimum wage, not being paid back wages, and being misclassified as independent contractors rather than employees) and work under conditions that may exacerbate the risks of job-related injury and illness. These conditions include inadequate safety training and fear of retaliation for speaking up about unsafe working conditions or reporting job-related injuries and illnesses (Arcury et al. 2001, 2010, Schlosser 2001, Frank et al. 2004, Salazar et al. 2005, Samples et al. 2008, De Castro et al. 2010, Gaydos et al. 2011, Minkler et al. 2014).

Many of these practices and conditions are violations of specific labor laws, including health and safety regulations. Several federal and state statutes cover working conditions, payment of wages, and treatment of workers in forestry services in the state of Oregon. These laws require employers to provide safety training (including instruction on the location and content of first aid kits), personal protective equipment (PPE) (except boots), rest and lunch breaks, and drinking water and sanitation facilities. They also require payment of wages in full when due as well as payment of time-and-a-half for any hours over 40 worked in a week. They prohibit retaliation for bringing unsafe working conditions to the employer's attention and reporting work-related injuries and illnesses (Table 1). These laws apply to all forest workers in Oregon regardless of immigration status.

Noting that transnational theorists have tended to focus on the positive aspects of the social networks through which immigrant workers gain employment and participate in multiple communities across international borders, Sandoval (2013, p. 3) coined the term "shadow transnationalism" to capture "the exploitative aspect of these networks and processes within and involving immigrant communities." Shadow transnationalism refers to the unauthorized/illegal aspects of industrial production in which people, practices, and processes that make up the system are hidden, either knowingly or unknowingly, from formal regulatory institutions. The government, employers, and unauthorized immigrants become "coconspirators" (Marshall 2007) in maintaining a set of social relations that result in the most marginal and vulnerable groups bearing substantial risks and "legitimate" populations reaping benefits. The government criminalizes undocumented immigrants through immigration policies, employers create incentives for migration in the form of relatively easy access to employment, and unauthorized immigrants seek invisibility to successfully navigate the system (Sandoval 2013, p. 2).

Although Sandoval's concept captures many aspects of the social arrangements of labor-intensive industries in the United States, it leaves out the experience of workers who enter the United States legally with H-2B visas as temporary, nonimmigrant "guest workers." The H-2B visa program is the program Congress created in the 1980s to authorize people from other countries to work temporarily in nonagricultural positions in the United States (the H-2A program is for agricultural workers). The program is designed to help employers who have a seasonal or temporary need for non-agricultural labor and cannot find US workers to fill these job vacancies. Investigative journalism articles (Knudson and Amezcua 2005), reports by attorneys representing H-2B workers (Bauer 2013, American University Washington College of Law and Centro de los Derechos del Migrantes nd), and at least one peer-reviewed study (Sarathy and Casanova 2008) published over the past 10 years suggest that although they are legally authorized to work in the United States, H-2B workers in forestry and other occupations often experience many of the same risks and working conditions as their undocumented counterparts and are embedded in the processes of shadow transnationalism.

Methods

Our purpose in conducting the survey was to better understand the health and safety conditions faced by forest workers in southern Oregon. A substantial body of research has shown that a participatory approach to research can often be more effective than traditional expert-driven research, especially when one is working with populations that are economically and politically disadvantaged, such as low-income, immigrant workers (O'Fallon and Dearry 2002, Israel et al. 2008, Lee et al. 2008, Wilmsen et al. 2008, Arcury et al. 2010, Minkler et al. 2010).

Applying the principles of participatory research, we established a project advisory committee in September 2010 that included forest workers, as well as representatives of LOHP, the National Institute for Occupational Safety and Health (NIOSH), NFWC, and Lomakatsi Restoration Project (a nonprofit ecological restoration organization based in Ashland, Oregon). Members of this committee developed the survey instrument using the National Agricultural Workers Survey (Department of Health and Human Services 2009) and a survey of immigrant restaurant workers in San Francisco's Chinatown (Minkler et al. 2010) as guides. Committee members translated the survey into Spanish, pretested it, and produced a final instrument based on feedback gathered during the pretest. The survey was approved by the Office for the Protection of Human Subjects of the University of California, Berkeley. Survey questions covered the specifics of the respondent's job (duties, the months worked, and how many hours spent doing specific tasks), general working conditions (pace of work, rest breaks, provision of drinking water, use of PPE, safety training, and others), working and living conditions when working in areas distant enough to require spending the night away from home, on-the-job injuries and illnesses, reporting and treatment of injuries, the respondent's current health and access to health care in general, wages and pay, and demographics.[1] The advisory group also guided development of the survey instrument, as well as the approach for recruiting and surveying participants, and the application of the

[1] *Journal of Forestry* subscribers may download the survey instrument from the Journal's website.

results to the development of a pilot promotora (lay health educator) program for forest workers. The promotora program is described elsewhere (Bush et al. 2014).

NFWC staff trained two women from the forest worker community in interviewing techniques. This was a key component of the participatory approach to the research. Traditional research approaches have encountered significant barriers in engaging immigrant populations, including language and cultural barriers, as well as distrust of research and fear of disclosing information or participating in research activities, due to immigration status, fear of retaliation, or earlier life experiences (Farquhar et al. 2005, Marais 2007, Minkler et al. 2010, Chang et al. 2013). By involving and training trusted community members who were knowledgeable about the conditions forest workers live and work in, we hoped to address some of these barriers.

The interviewers were trained in the difference between leading and neutral questions and the importance of asking the questions the same way in every interview. They practiced interviewing with project leaders and then with a group of workers (with project leaders observing and interposing explanations of why questions were worded as they were). These practice interviews were not used in the analysis of the results.

The trained interviewers then administered the survey. Because forest workers in southern Oregon are a “hidden population” and there is no comprehensive list of all of them in the area to use as a sampling frame, we used a snowball sampling method to identify workers to interview (Heckathorn 2002). The interviewers used their contacts in forest worker communities to identify the initial respondents and then asked each interviewee to identify additional workers who might be interested in being interviewed. Although Heckathorn recommends offering financial incentives to expand the field of study participants, our budget did not permit us to do so. To be included in the sample, a worker had to be 18 years of age or older and currently working for a forestry services contractor in southern Oregon. No other selection criteria were used.

Snowball sampling is effective in reaching members of populations, such as undocumented immigrants, for whom no sampling frame exists or who are often difficult to recruit for participation in surveys and other research because they are involved in illegal activities (i.e., illicit drug users) or are stigmatized (i.e., gay men and women) (Sadler et al. 2010). The technique has limitations, however, because snowball samples are nonprobability samples, and therefore study results are not generalizable to the larger populations being studied. Because recruitment of respondents is not random but rather proceeds through contacts in the social networks of the initial respondents, there is a risk that people with similar characteristics will be overrepresented in the sample (Biernacki and Waldorf 1981, Atkinson and Flint 2001, Sadler et al. 2010, Shaghaghi et al. 2011).

The small size and nonrandomness of the sample in our study of forest workers in southern Oregon means that we cannot generalize the findings to larger populations of forest workers in the region or elsewhere. Moreover, our sample may include more disgruntled employees than a random sample would. We sought to mitigate these limitations by contacting workers

outside the social networks of the interviewers in hotels where H-2B workers stay as well as at shopping centers and laundromats frequented by forest workers.

The interviews were intended to be in-person, but once the interviewing began, it became evident that most workers did not want to sit through a lengthy interview that took 2–3 hours to complete. As a result, the survey became self-administered. The interviewers distributed questionnaires to workers, asking them to fill them out at their leisure at home, later returning to pick them up. The interviewers ensured that worker responses to the questionnaire were not contradictory or vague. For example, some respondents skipped the question asking whether their employer provided drinking water at the work site every day but then answered the follow-up question intended for respondents who answered affirmatively. Rather than assume that the respondents intended to answer “yes” to the initial question, the interviewers checked with them to be sure that that was indeed their answer.

We entered the data from the returned surveys into an SPSS database. We compiled descriptive statistics and explored relationships among variables with cross-tabulations. We calculated lambda values to measure strength of association (1 = perfect association and 0 = no association) between variables. We calculated the rate of reported on-the-job injury in our sample using the number of respondents whose injuries met OSHA’s criteria defining a recordable injury as those requiring 1 day or more away from work (29 CFR 1904.7(b)(1)(ii)). Each injured worker was counted as one case, whether or not the worker suffered multiple injuries. We used the BLS formula [(N/EH) × 200,000] to calculate the reported on-the-job injury rate. In this formula, N is the number of injuries and illnesses, EH is the total hours worked by all employees during the calendar year, and 200,000 is the base for 100 equivalent full-time workers working 40 hours per week 50 weeks per year.

Following standard procedures for participatory research, we took three steps to increase the trustworthiness of our findings (Lincoln and Guba 1985). We conducted “participant checking” through two meetings with workers on the advisory committee to discuss the descriptive statistics as well as alternative interpretations of the data. We also conducted “peer checking” by seeking the opinions on data interpretations of colleagues who were not directly involved in the survey. Finally, this survey constituted a “triangulation of methods” as it was an alternate method of investigating working conditions among forest workers in southern Oregon to the qualitative research the University of Oregon conducted in collaboration with NFWC from 2003 to 2005 (Moseley 2006) and NFWC repeated in 2010 (results not yet published).

Part of our analysis was focused on determining whether forest workers who come to the United States on foreign temporary work (H-2B) visas are treated differently from other workers. We conducted a series of cross-tabulations and calculated lambda values to find strengths of association between the variable “H-2B” (a nominal variable that indicated whether the respondent was in the United States on an H-2B visa) and more than 70 other variables that measured things such as whether rest breaks were provided, whether the respondent was injured, and whether drinking water and safety equipment were provided. We also wanted to assess whether responses from employees of companies with large numbers of respondents biased the results. To do this, we conducted correlation analysis,

calculating lambda values, between the variable “company” and the same set of variables we used in our analysis of H-2B worker experience.

Because high numbers of respondents gave answers suggesting that labor laws are not always followed and because our worker sample included workers from half of all the forestry services companies licensed as farm/forest labor contractors by the Oregon Bureau of Labor and Industries with addresses in Jackson and Josephine counties, we also analyzed the data on variables pertaining to labor laws for those two counties separately. Using the tables from our cross-tabulations of the variable company and the 70 other variables, we manually counted responses for the 21 companies with addresses in Jackson and Josephine counties. A company was counted only once for responses suggesting that labor laws were not being followed regardless of the number of workers selecting that response.

Results

General Sample Characteristics

A total of 150 forest workers completed the survey. All of the forest workers in our sample were men. Their median age was 30 years. All of them came from Mexico except one who said he was from Guatemala. With the exception of one worker whose native language was Triqui, all of the survey respondents were native speakers of Spanish. Survey respondents had been in the United States for an average of 8 years and had been working for their current employer for half that time. Twenty-eight percent of the workers in the sample were working in the United States on H-2B visas.

Workers employed by 27 different contractors responded to the survey. Survey respondents named 21 contractors based in Jackson and Josephine counties, which represented half of the 42 licensed farm/forest labor contractors that had addresses in these two counties at the time of the survey. Of the six other contractors named by survey respondents, three were based in other Oregon counties, one was based in Yreka, California, and two were not identifiable on the US or Oregon labor departments’ lists of licensed farm/forest labor contractors. Four respondents declined to name their employers.

A disproportionate number of survey respondents (58 workers [39% of the sample]) worked for a single company. Oversampling of employees of this company did not have any discernible effect on survey results because correlation analysis between company and more than 70 other variables in the data set found only very weak or weak associations (lambda ≤0.24) between the company for which the respondent worked and his answers to the survey questions.

Workplace Practices

We will focus here on safety training (including training on first aid resources and procedures), provision of PPE, breaks and work pace, and provision of water and toilet facilities.

Sixty percent of the workers we interviewed received some type of training on the job, but only 39% said they received safety training. Correlation analysis showed only very weak

associations (lambda ≤0.094) between whether workers received safety training, who their employer was, and whether they were participating in the H-2B program. Most respondents (71%) knew there was a first aid kit at their workplace, but 24% did not. Moreover, of those who did know there was a first aid kit at their workplace, 38% did not know if it was properly stocked.

Most of the survey respondents (85%) said that they always used a hardhat and gloves, and more than half said they used protective lenses, chaps, ear protection, and protective boots every day. However, 95% of the respondents said that their PPE was sometimes or always worn out. In addition, although we did not specifically ask who paid for PPE, many respondents took it upon themselves to write on the questionnaire that they buy PPE themselves. Many wrote that they had to buy work gloves (34%), safety goggles (23%), hardhats (22%), ear plugs (15%), and chaps (6%) with their own money. It is likely that more workers than these have to purchase their own PPE since these were write-in responses, not answers to direct questions.[2]

Ninety percent of the survey respondents felt they were sometimes or always pushed to work too fast or too hard. Many went to work during the past 12 months even when they felt too sick to work (59%) or felt a lot of pain from an injury (47%). Seventy-eight percent said they never get rest breaks, and another 17% said they get rest breaks only sometimes. More than three-quarters (77%) did not consistently get a lunch break every day.[2]

Fifty-three percent of the workers in the study said that their employer did not provide clean drinking water every day. Consequently, 35% said that they brought their own drinking water to work, 10% said that they drank from streams, and 55% said that they do both. Almost all respondents reported that their employer did not provide a toilet (92%) or water for washing hands (86%) at the work site every day.[2]

Injuries

Sixty-one (41%) of the forest workers in the sample indicated they were injured on the job during the last 12 months. Table 2 lists the number and percentage of injuries by type.

Forty-one of the 61 respondents who suffered on-the-job injuries during the previous 12 months (67% of those injured) said that they missed a day or more of work due to a job-related injury in the same time period. Use of the BLS's formula for calculating incidence rates yields a rate of 42 recordable injuries per 100 forest workers for this sample of workers.[3] The number of years respondents had worked for their current employer were moderately associated with whether they were injured on the job (lambda = 0.311). The majority of injuries (41) among the workers in the sample occurred during the first 6 years with the current employer.

[2] $n = 150$ for all percentages in this paragraph.

[3] $(N/EH) \times 200{,}000$. In the current study, $N = 41$; $EH = 196{,}800$ (150 workers working full time for 32.8 weeks, which is the average number of weeks worked by workers in our sample during the year covered by the survey). Hence, $(41/196{,}800) \times 200{,}000 = 41.6$.

Working Conditions across Contracting Companies

Table 3 provides information on reported working conditions in the 21 companies in our sample with addresses in Jackson and Josephine counties. The data show that many of the workplace practices survey respondents described are common to these companies. For example, workers in all but three of the companies reported that they never have all the PPE they needed on the job. Workers from 90% of the Jackson and Josephine county-based contractors in our sample reported that they did not receive rest breaks, and workers from 86% of the employers did not receive drinking water at the work site every day.

Wages and Income

The workers in our sample earned an average of $15.27/hour (the lowest wage was $8.95/hour and the highest was $20.00/hour). The median monthly income was $1,800, and the respondents worked an average of 8.2 months in the previous year.[2]

As Figure 1 shows, almost half of all the workers in the study said they were not paid for all hours worked during the previous 12 months. For some this occurred during one to two pay periods, and for others it occurred in three or more pay periods. Close to half (48%) of the survey respondents said that they did not receive overtime pay for hours in excess of 40 worked in a week. Thirty-seven percent said that the boss had owed them wages at some point, and more than three-quarters of these (one-third of all respondents) said they never received them. Sixty-two percent said that sometimes they received their pay late. More than half (58%) reported that they did not have as much work as their employer led them to believe they would in the last 12 months; 17% said that this occurred during more than 6 pay periods. A majority of respondents (86%) said they did not receive pay for travel time.

Fear of Reprisals

Table 2 shows that a majority of respondents with injuries reported them to their supervisors. For example, 76% of the respondents who sustained lacerations on the job and 52% of those who suffered a scrape or abrasion reported their injuries to their supervisors. Yet, a sizable proportion of the respondents who were injured did not report one or more of their injuries. As Table 4 shows, 71% of these said they did not report their injuries because they were afraid they would be fired, and 39% said that workers get in trouble when they report getting hurt at work.

Responses were similar for not reporting illnesses. Table 5 shows the responses to a series of questions we asked about musculoskeletal pain, rashes, whiteness or numbness in fingers (symptoms of Raynaud's phenomenon), diarrhea, and pesticide-induced illnesses. Following these questions, we asked respondents whether they had reported any of their pain or other symptoms to their supervisors. The majority of respondents (81%) had not. Although we did not ask whether these illnesses were medically determined to be caused by work, only 5% of these respondents stated that the reason they did not report the illness was because they did not think it was work related (Table 4). The majority (51%) of those who said they had symptoms of an illness but did not report them to their supervisor, said that they did not report their symptoms for fear of being fired. The other most common reasons were that they feared some other kind of retaliation, that they were afraid of not getting more work, that

they did not know how to report illnesses, and that it was too much trouble to report illnesses (Table 4). Many respondents (60%) also felt pressure to keep working even if they are injured or got sick.

Working Conditions and H-2B Workers

Table 6 presents the results of our analysis of correlation between participation in the H-2B visa program and working conditions. For almost all variables we found no association (lambda = 0) between being an H-2B worker and other variables. The few associations we found were weak (lambda ≤0.27).

Discussion

These results suggest that the H-2B workers in our sample face the same working conditions as other workers—routinely facing working conditions that appear to violate OSHA and wage and hour regulations—accompanied by the same fear of retaliation. Interviews with employers (McDaniel and Casanova 2003, 2005) and forest workers (NFWC interviews, Medford and White City, OR, April 2011) also indicate that workers with H-2B visas do establish contacts with resident communities here, including living and interacting with relatives. This finding suggests that the concept of shadow transnationalism should be broadened to include this class of workers who are legally authorized to work in the United States.

The demand for cheap, easily controlled, highly productive labor is the major driving force of the practices and processes involved in recruiting vulnerable immigrant and foreign workers and in maintaining their structural vulnerability (Krissman 2000, Champlin and Hake 2006, Sandoval 2013). Federal immigration policies create structural incentives for securing such labor by criminalizing undocumented workers and imposing restrictions on legal, temporary foreign workers (Sarathy and Casanova 2008, Quesada et al. 2011, Holmes 2013). These policies also create the conditions that make undocumented and H-2B workers, including forest workers, disproportionately vulnerable to occupational hazards and economic distress. Undocumented workers are vulnerable to deportation. This enables employers to ignore worker demands for higher pay or better working conditions (Casanova and McDaniel 2005, Bauer 2013). The structure of the H-2B program provides similar leverage to employers because H-2B workers are not free to look for another job if they are not satisfied with their pay or working conditions (Vivian 2006, Ashby 2008).

Although contractors may not knowingly hire undocumented immigrants, there is evidence that hiring vulnerable workers is a deliberate strategy for some. Krissman (2000, p. 294) found that agribusiness employers sought to avoid government regulation and prevent unionization by adopting new personnel policies that involved hiring undocumented immigrants through transnational kinship networks. Sarathy (2012, p. 68–69) states that forestry services contractors in southern Oregon rarely report false immigration documents even though it is common knowledge that a large proportion of forest workers are undocumented. McDaniel and Casanova (2003, 2005) provide examples of forestry services contractors saying that they prefer H-2B workers over undocumented workers because they

have less experience working in the United States and are therefore less likely to demand easier work and higher pay. One contractor indicated that

> the primary attraction of the H-2B program may be the control that contractors have over the workers as compared to other types of workers. (Casanova and McDaniel 2005, p. 74)

Hiring structurally vulnerable workers, whether H-2B or undocumented, is economically advantageous for employers: it can keep costs down, improve competitiveness in bidding, and potentially increase profits. In addition, recruiting workers through transnational networks allows employers to delegate many of their former responsibilities, including recruitment, training, and supervision, to employees (job foremen) who are members of these networks themselves (Krissman 2000). In interviews conducted by the Alliance of Forest Workers and Harvesters (2010) and McDaniel and Casanova (2003, 2005), many contractors alleged that failure to follow labor laws was common among their colleagues because that reduced their costs and increased their competitiveness.

The data from our current study suggest that many forestry services contractors in Jackson and Josephine counties may not consistently follow labor laws. Survey respondents worked for half (21 contractors) of the 42 licensed contractors based in these 2 counties and well over half of these workers reported that they work under a variety of conditions that may violate labor laws. The 19 companies located in Jackson and Josephine counties who employed workers in our sample who said they did not get rest breaks comprise 90% of our sample and 45% of the forestry services contractors based in those two counties. In other words, nearly half of the forestry services contractors based in Jackson and Josephine counties may not be following the requirement to provide regular rest breaks. The data suggest further that high numbers of contractors in Jackson and Josephine counties may not be following laws requiring them to provide potable water to their workers, to provide their employees with safety training, to pay all wages in full when due, and several other requirements (Table 3). The fact that many respondents spontaneously reported that they have to buy their own gloves, safety goggles, hardhats, ear plugs, and chaps suggests that there is a problem regarding provision of PPE as well because contractors are legally required to provide all safety equipment, except boots, at no cost to the employee.

Although the USDA Forest Service contracts stipulate that contractors must comply with all applicable labor laws, agency officials may not effectively monitor compliance with these contractual obligations. In a 2010 report to the US Senate on the treatment of H-2B workers in the Pacific Northwest, the agency reported conducting 267 site visits on labor-intensive service contracts in Oregon and Washington through Nov. 15, 2010. Only 8 worker safety problems were identified among these 267 site visits and only 1 instance (2009) of a contractor violating contract requirements concerning the treatment of H-2B workers (USDA Forest Service 2010). These findings appear to conflict with the findings of the Medford, Oregon, OSHA field office, which conducted 13 inspections of forestry services contractors in southern Oregon in 2010 and found multiple violations in all but 2 of the companies. In four of the companies the violations were listed as serious.[4] The Department of Labor Wage and Hour Division completed 17 inspections of forestry services contractors

in Oregon between 2005 and 2013 and awarded more than $96,000 in back wages to workers (US Department of Labor Wage and Hour Division 2014).

The high proportion of survey respondents who said they did not report their injuries and illnesses to their supervisors because they feared being fired or retaliated against in some other way indicates that the workers in the study work under a perceived threat of retaliation. That almost two-thirds (60%) of the respondents also said they felt pressure to keep working even when they are sick or injured also indicates fear of retaliation. In Moseley's (2006, p. 8) qualitative study, one worker explained it like this:

> No one in his right mind would ever use the workers' comp system. The contractors will make sure that you never work again if you use it. There are no health benefits at all; you get sick, you work or you lose your job. You get hurt, you work or you lose your job. You complain and you never work again.

It seems contradictory that despite the general atmosphere of fear the workers in our sample described, more than half of them reported their injuries to their supervisors (more than three-quarters in the case of lacerations). The workers on our project advisory committee explained, during participant checking, that the more serious the injury, the more likely the worker is to report it. The data in Table 2 support this observation. They show that workers in this study were most likely to report lacerations and broken bones to their supervisors, and they were least likely to report other unspecified injuries. This is similar to what has been seen in studies of workers in other industries in the United States (Rosenman et al. 2000, Biddle and Roberts 2003) and Canada (Shannon and Lowe 2002), which have found that high proportions of potentially eligible workers do not file workers' compensation claims, but that severity of injury was among the strongest predictors of a worker filing a claim.

Although we did not ask in the present study whether respondents actually were subjected to retaliation, the data show that they fear retaliation. Workers discussed this fear in a meeting of our project advisory committee and in a focus group we conducted as part of the evaluation of the promotora program. They concluded that the fear of losing their jobs prevents them from reporting injuries or taking action to improve working conditions. They also expressed a belief that supervisors have no compunction about firing them because they "know there are lots of other guest workers who are available to take your place if they want to fire you" (Focus Group Participant, quoted in Bush et al. 2014, p. 795). This finding is consistent with other studies that have documented the atmosphere of fear under which undocumented and H-2B workers live while in the United States (Knudson and Amezcua 2005, Salazar et al. 2005, Sarathy and Casanova 2008, Sarathy 2012, Holmes 2013).

Conclusions and Need for Further Research

The workers who responded to our survey reported workplace practices and conditions suggesting that there are problems with working conditions in the forestry services industry in southern Oregon. The fact that the H-2B workers in our sample faced the same working

[4]For more information on 2010 inspections by the Medford, Oregon field office on North American Industry Classification System (NAICS) 115310 (Support activities for forestry), see www.osha.gov/pls/imis/industry.html.

conditions and wage theft as other study participants and were just as likely to report fear of retaliation suggests that this class of legally authorized workers are a part of transnational communities living and working in the shadows equal to their undocumented counterparts. Immigration policy provides employers with leverage to exercise a degree of control over these legally authorized workers that would not be possible if the workers were able to participate in the free labor market. It provides similar leverage over undocumented workers. That leverage, in turn, is supported by the fear of retaliation survey respondents reported. This observation suggests that US labor and health and safety laws are not able to effectively protect Oregon's forest workers because of their structural vulnerability—their low positioning in social structures. Immigration policies and enforcement practices that contribute to creating a labor system with these inherent vulnerabilities and power imbalances need to be further examined and changed. Although our results are limited to the sample of workers who responded to our survey, the fact that other studies have found similar problems in forestry services and other labor-intensive industries that rely on immigrant and foreign labor supports our findings (Krissman 2000, Casanova and McDaniel 2005, Salazar et al. 2005, Champlin and Hake 2006, Sarathy and Casanova 2008, Sarathy 2012, Sandoval 2013).

Our study results also point to the need for further research. First, research is needed on actual employer practices—are labor laws being violated, does retaliation occur, and what role do enforcement agencies play? Second, research is needed on the precise conditions under which injuries and illnesses occur in the forestry services industry and how those injuries are handled. Developing case examples of positive outcomes of workers reporting their injuries and receiving adequate medical care could hold important lessons for employers and workers alike in improving safety and health in a hazardous industry. Finally, research is needed on current policies and their effectiveness in ensuring that forest workers have safe and fair working conditions: on immigration policies and their direct and indirect impacts on the labor conditions they create and on labor laws and other relevant forest policies.

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Management and Policy Implications

Forest workers in southern Oregon, most of whom are Spanish-speaking Latino immigrants, reported workplace practices and conditions suggesting that their employers may not consistently follow labor laws. This was true of workers with H-2B visas as well as other workers in the sample and indicates a need for greater oversight of service contracts on public forestlands. Agency policies should be strengthened so that inspection for labor law compliance becomes routine. To be efficient, these inspections could be combined with regular inspections of performance on the technical specifications of contracts. This may require additional training for agency inspectors. Because intense competition for contracts creates incentives for contractors to cut costs, policies should be put in place to encourage contractors to include the costs of safety training and daily safety briefings in their bid prices and to require consideration of these costs in the evaluation of bids. The fear of retaliation reported by survey respondents mirrors the results of studies of low-wage immigrant workers in other industries and suggests that a number of reforms may be needed to address health, safety, and workers' rights issues. Among these are reforming the H-2B program to allow forest workers holding these visas to participate in the free labor market and otherwise expanding the pool of legally authorized forest workers. Such reforms would give forest workers a more protected employment status that would allow them to report problems and suggest workplace improvements to employers and/or regulatory agencies.

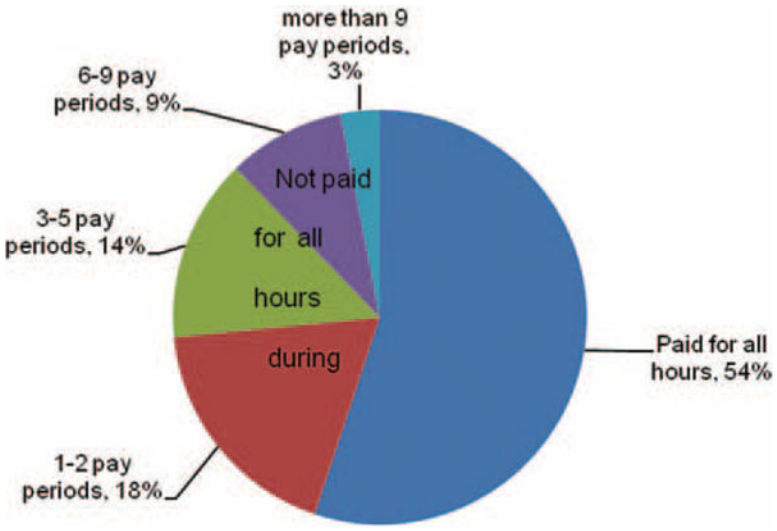

Figure 1.

Percentage of respondents who were paid or not paid for all hours during one or more pay periods in the last 12 months (n = 141).

Table 1

Provisions of labor laws covering forestry services.*

Requirement	Authority
Provide a safe workplace and safety training	OSHA 29 USC 654 §5(a)(1); OAR 437-007-0140(1)(a)(b)
Provide a first aid kit for each crew and safety training in first aid and CPR; develop a plan for medical emergencies or emergency treatment of injuries and inform crew members of this plan	OSHA 29 CFR §1910.151(b); OAR 437-007-0220(1)(2)(10)
Provide PPE (except boots) that is operable and in good condition at no cost to the employee	OSHA 29 CFR §1910.132(h)(1); OAR 437-007-0300 to 0335
Provide rest breaks during every 4-h period of work	OAR 839-020-0050(6)(a)
Provide drinking water and a means to carry it; provide sanitary toilets and hand-washing facilities or suitable substitutes such as sanitary kits	OAR 437-007-0245(1)(2)(3)
Payment of at least the federal minimum wage; payment of overtime wages of at least 1.5 times the worker's regular pay for all hours worked over 40 in a week	Fair Labor Standards Act; Contract Work Hours and Safety Standards Act; OAR 839-020-0010 & 0030
Pay full wages when due and provide an itemized statement of earnings; comply with federal and state safety and health housing standards; ensure that vehicles used to transport forestry workers are safe and insured and driven by properly licensed drivers	AWPA
On federal contracts, pay prevailing wages in the locality for the class of worker being employed; provide fringe benefits including health, retirement, unemployment and vacation and holiday pay, or provide a cash equivalent to these benefits; deliver notice or post prevailing wage and fringe benefit requirements so workers know about them; maintain records for each employee working on covered contracts	McNamara-O'Hara Service Contract Act
Permit workers to exercise their rights under the law without retaliation or discrimination	OSHA 29 USC 660 §11(c); OAR 839-004-0021; AWPA

OSHA, Occupational Safety and Health Act; OAR, Oregon Administrative Rules; AWPA, Migrant and Seasonal Agricultural Workers Protection Act.

*This is not a comprehensive list of all applicable laws and their provisions. For a brief summary of the laws applicable to forestry services see Alliance of Forest Workers and Harvesters (2010). For more comprehensive information visit the Department of Labor's website (www.dol.gov) or the state of Oregon's website (www.oregon.gov).

Table 2

Injury type, and frequency of reporting and treatment.

Injury type	No. of cases*	% Sample who were injured (*n* = 150)	No. (%) reported to supervisors (*n* = 61)	No. (%) treated (*n* = 61)
Scrape/abrasion	50	33	26 (52)	33 (66)
Insect bite	44	29	22 (50)	28 (64)
Burn	34	23	16 (47)	25 (74)
Bruise	25	17	16 (64)	16 (64)
Laceration	21	14	16 (76)	17 (81)
Sprain	20	13	13 (65)	14 (70)
Dislocated bone	18	12	10 (56)	13 (72)
Broken bone	15	10	11 (73)	12 (80)
Other injury	7	5	3 (43)	4 (57)
Amputation	0	0	0	0

*Numbers sum to >61 because many workers said that they sustained more than one type of injury.

Table 3

Working conditions in companies in Jackson and Josephine counties (n = 21 unless otherwise indicated).

Companies whose employees	No. of companies	% of companies in sample	% of contractors in Jackson and Josephine counties (n = 42)
Do not get rest breaks	19	90	45
Do not have all of the PPE they need	18	86	43
Are not provided water at work site	18	86	43
Have never received training at work	12	57	29
Do not know if there is a first aid kit at the work site	8	38	19
Do not know if first aid kit is stocked (n = 18)	11	61	26
Were injured on the job in the last 12 months	14	67	33
Are yelled at on the job	19	90	45
Were not paid for all hours worked in one or more pay periods in the last 12 months	13	62	31
Are not paid overtime	14	67	33
Are sometimes paid late	17	81	40
Have been owed wages by the company	15	71	36
Have never received money the company owed them (n = 15)	13	87	31

Table 4

Reasons for not reporting injuries and illnesses to supervisor.

	Injuries (n = 28)*		Illnesses (n = 87)*	
Reason	**No.**	**%**	**No.**	**%**
Afraid of getting fired	20	71	44	51
Afraid of getting in trouble or retaliation of some kind	11	39	27	31
Too much trouble to report†			28	32
Afraid of not getting more work†			25	29
Cannot afford time off†			20	23
Thought it would get better†	5	18		
Did not know I should†	3	11		
Did not know how to report†			24	28
Did not think it was work related†			4	5
Other	2	7	1	1

*Percentages do not sum to 100 because respondents were asked to check all answers that apply.

†Blank spaces indicate that this response was not an option for this question.

Table 5

Work-related illnesses and musculoskeletal disorders.

			Had pain every day for ≥1 week during the past 12 months		
Illness	**No. of cases**	**% sample (*n* = 150)**	**Body location**	**No. of cases**	**% sample (*n* = 150)**
Had poison oak rash in the past 12 months	67	45	Back	61	41
Fingers felt numb during the past 12 months (Raynaud's phenomenon)	53	35	Hand/wrist	34	23
Became sick or had reaction to pesticides in the past 5 years	21	14	Shoulder	33	22
Had diarrhea for more than 3 days during the past 12 months	18	12	Elbow/arm	31	21
Fingers turned white during the past 12 months (Raynaud's phenomenon)	6	4	Legs/feet	27	18
			Other	9	6

Table 6

Strength of association between holding an H-2B visa and select variables.

H-2B workers who	No.	% (*n* = 40)	Lambda (*n* = 150)
Do not get rest breaks	25	63	0.000
Are sometimes paid late	28	70	0.000
Are not provided water at work site	10	27	0.270
Are not paid overtime	17	43	0.000
Were injured on the job in the last 12 months	13	33	0.000
Reported injury to supervisor (*n* = 13) *	6	46	0.172
Got treatment for injury (*n* = 13) *	12	92	0.000
Paid for own treatment (*n* = 13) *	13	100	0.000
Have been owed wages by the company	17	43	0.000
Never received money the company owed them (*n* = 17) †	17	100	0.000
Do not know if a first aid kit is on site	16	40	0.000
Have never received training at work	5	13	0.052
Were not paid for all hours worked in one or more pay periods in the last 12 months	18	45	0.000
Worked when sick	23	58	0.102
Worked when injured	26	65	0.030
Are yelled at on the job	26	65	0.000

* *n* = 13; 13 H-2B workers in the sample reported being injured on the job in the previous 12 months.

† *n* = 17; 17 H-2B workers in the sample said their employer had owned them money at some point.