

Self Care and Health-Seeking Behavior of Migrant Farmworkers

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Abstract There are an estimated three million migrant and seasonal farmworkers (MSFW) in the United States. In addition to the inherent dangers of farm work, numerous factors place MSFW at even greater risk for work-related injuries. Little is known about how MSFW care for work-related injuries, and how the decision to seek professional care is made. A prospective survey using face-to-face structured interviews was used to explore the type and frequency of occupational injuries as well as self-care and health-care seeking practices of MSFW. Musculoskeletal injuries were the most commonly reported injuries, followed by injuries of the skin and chemical exposure. Self care with over-the-counter remedies was the predominant method of dealing with injuries, and, with the exception of chemical exposure, was found to be for the most part, appropriate. The reported use of alternative medicine or herbal remedies was low. Future research efforts should focus on ergonomic modifications and farmworker education to reduce or prevent musculoskeletal injuries. The number of reported chemical exposures and inappropriate treatment draw attention to the need for continued efforts for both primary prevention of exposure and optimal treatment once exposure occurs.

Keywords Migrant farmworkers · Hispanic · Mexican · Injury · Self-care

The National Center for Farmworker Health (NCFH) estimates there are at least three million migrant and seasonal farmworkers (MSFW) in the United States (US) who contribute knowledge, expertise and labor to the agricultural industry [1]. A seasonal farmworker is a person whose principle employment is in agriculture on a seasonal basis, and a migrant worker meets the same definition but establishes a temporary home during times of work.

Agriculture is considered one of the most dangerous industries in the US [2]. Crop work is labor-intensive with dawn to dusk work hours in often unfavorable weather conditions. Many crops require stoop labor and repetitive movements that can result in musculoskeletal injuries. Workers are exposed to a variety of potentially dangerous chemicals that can cause numerous health problems ranging from nausea, headaches, skin rashes and respiratory disease to neurological deficits and birth defects [3]. Working outdoors in direct sunlight can cause heat exhaustion, sun burn and skin cancers [4] and diseases of the eye such as cataracts, retinal damage [5]. Farmworkers are also susceptible to injuries from farm machinery, falling items, and falling from trees or ladders [4].

In addition to the inherent dangers of farm work, numerous factors place MSFW at even greater risk of injury and illness. Most MSFW in the US are of Hispanic descent and include Mexicans, Mexican Americans, Central Americans and Cubans [6, 7]. Only 12% of MSFW speak English [1]. This makes instruction on farm work safety difficult and can lead to poor communication of symptoms and medical history to health care providers.

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MSFW are often paid piece rate for their work rather than hourly. This method of payment discourages taking breaks and can lead to long work days with constant repetitive movements [8]. The median educational level of MSFW is 6th grade, with 20% having less than three years of formal education [1]. Low educational rates can influence how MSFW understand potential risks associated with pesticides and other safety-related warnings.

Obtaining reliable data on farm worker injuries is difficult for several reasons. First, the transient nature of the work force makes reporting and tracking of injuries difficult. Most farms employ fewer than 11 workers, and thus are exempt from Occupational Safety and Health Administration (OSHA) reporting regulations [4]. Poor or non-existent English language skills discourage reporting of injuries. It is likely that many workers lack proper documentation to work in the US and as a result are reluctant to report injuries or seek professional health care for fear of loss of job or deportation [9].

Earle-Richardson et al. [8] examined medical records on 516 MSFW work-related injuries. Muscle strain was the most common injury, accounting for 31% of the injuries reported. Most of the strains were related to over-use, followed by assuming an awkward position and weight bearing activities. McCurdy et al. [10] conducted a longitudinal study of 837 migrant Hispanic farmworkers. Of the 96 injuries reported, 73% were seen by a physician and 67% resulted in lost work. Sprains and strains accounted for 31%, with overexertion and strenuous movement being the presumed cause.

While the high risk for work related injury has been documented, little is known about how MSFW treat work-related injuries and how they make the decision to seek professional treatment. Cooper and colleagues [11] randomly selected 267 mothers of households who migrated for farm work during the previous year. Information was gathered on a total of 25 work-related injuries. In terms of follow-up care for the injuries, it was reported that eight were seen at the ED or clinic, six were treated by the employer, ten injuries were self treated and one subject refused treatment. The reasons given for self-treatment rather than being seen by a professional were: employer prohibited sick leave, no transportation, could not stop work, and no money for medical care. Studies of self management of skin problems by MSFW suggest that home remedies and over-the-counter treatments are commonly used [12, 13].

It has been reported that Hispanic Americans often rely on folk and herbal remedies to treat illnesses. Poss and colleagues [14] found that herbal remedies were commonly used by Mexican American. Lopez [15] explored the use of Mexican folk remedies among 70 Mexican-American women and reported a persistent use of folk remedies among even highly assimilated women. Garces et al. [16]

examined factors associated with health seeking among 54 Latina immigrants and found that participants typically sought traditional medicine only when complementary/alternative medicine was not effective. Coffman et al. [17] conducted focus groups with 19 Latino immigrants on self prescription practices. Self-prescription was reported to be common and Mexican drugs were readily available at Latino markets in the US. Serious health outcomes related to folk remedies by Mexican patients have been identified in the literature [18, 19]. Additionally, it has been found that the majority of Hispanics do not discuss the use of home remedies and alternative care to their health care providers [14, 20]. It is important that health care providers be aware of patient's participation in folk remedies, understand the type of home remedies used and understand how the decision to seek traditional health care is made. The purpose of this study was to explore the type and frequency of occupational injuries as well as self-care and health-care seeking practices of MSFW.

Methods and Design

Institutional review board (IRB) approval was obtained from the University of Detroit Mercy. We conducted a prospective survey using face-to-face structured interviews to explore the type and frequency of occupational injuries as well as the related care and health-seeking practices of MSFW. The sample frame was residents of 41 MSFW residential camps in three Northern Michigan counties. The total sample was 150 subjects. Inclusion criteria were (a) age 18 or older, (b) principal employment in agriculture on a seasonal basis (c) able to speak and understand English or Spanish, (d) willingness to complete the interview. Data were collected between June 1 and July 31, 2008 by interns who were part of *Project Puente*, a summer internship for bilingual college students at Northwest Michigan Health Services Inc. (NMHSI), a federally funded clinic for MSFW.

The interns worked in pairs and were assigned to one of the three counties. Each pair recruited 50 subjects. Potential participants were approached during outreach visits to farmworker residence camps. The study was described and MSFW were invited to participate. Because some of the MSFW may have been undocumented, it was felt that there may be reluctance to sign informed consent. A bilingual information sheet containing all the elements of informed consent was given to each participant. Participants were assured their answers would be kept confidential, and no personally identifying information was collected. Responses were hand written by the NMHSI interns and double entered into an Excel spreadsheet. Participants received a \$10 gift card for a local grocery store to thank them for their time.

Demographic data were collected regarding age, sex, ethnicity, country of birth, number of months or years in the US, languages spoken, marital status, home state or country, and education. Next participants were asked if they had been injured while working in agriculture in the last year. If they replied no they were thanked for their time and given the gift card. If they replied yes, the interview continued with open-ended questions to explore work-related injuries, self-care practices and the decision to seek professional care. The interns also had a list of prompts for each question to ensure that specific topics were addressed. Questions asked were:

1. Describe the injury (question were repeated for each additional injuries if more than one)
2. What crop were you working at the time of the injury?
3. What do you think was the cause of the injury?
4. How did you treat the injury?
5. Who, if anyone, did you consult about this injury?
6. For those who sought care in the ED: Why did you go to the ED?
7. For those who went to a clinic or ED: Did any of your health care providers ask you how you have been caring for your injury?

Percentages were computed for each response to the structured questions. Chi square and t tests were used to assess differences between genders and educational level.

Results

Data were analyzed on 150 MSFW between the age of 18 and 74 with a mean age of 36.7 years ($SD = 12.48$). They were largely male (61.3%) and traveling with their spouse and family (66%). When asked about their race or ethnic group, 93.3% identified themselves as Hispanic, with 73.3% of the participants reporting Mexico as their country of origin. The average amount of time in the US ranged from one month to 66 years, with a mean of 19 years ($SD = 15.05$). In terms of education, 55% had less than high school education and 20% had not completed elementary school. Most were hired by the grower rather than a crew leader (74%) and were paid hourly (80.7%) rather than piece rate. An unusually large number ($n = 10$) of this sample graduated from college. This was due to one family in which the parents migrated and their children, who did not migrate, decided to join them for the summer and work the cherry crops. See Table 1 for additional characteristics of the sample.

A total of 185 injuries were reported by 109 (73%) of the participants, with 45 of the participants reporting more than one injury. The difference between average numbers of injuries by gender was not significant. Men reported an

Table 1 Characteristics of the sample ($N = 150$)

Characteristic	<i>n</i>	%
<i>Gender</i>		
Male	92	61.3
Female	58	38.6
<i>Preferred language</i>		
Spanish	112	74.6
English	31	20.6
Either Spanish or English	7	4.6
<i>Traveling</i>		
Alone	22	14.6
With spouse/family	99	66
With relative of same gender	9	6
With work crew	14	9.3
<i>Race/ethnic group</i>		
Hispanic	140	93.3
White	8	5.3
Other	2	1.3
<i>Country of origin</i>		
Mexico	110	73.3
US	36	24
<i>Highest grade completed</i>		
None	10	6.6
Some elementary school	20	13.3
Elementary school	32	21.3
Some high school	20	13.3
Completed high school	46	30.6
Some college	12	8
Completed college	10	6.6
<i>Hired by</i>		
Grower	111	74
Crew leader	39	26
<i>Age</i>		
		Mean
Male		36.4
Female		37

average of 1.21 injuries and females reported an average of 1.27 injuries ($t = .292$ ($df = 148$), $P = .771$). The relationship between gender and whether the respondent experienced multiple injuries was examined and no significant relationship was found. ($X^2(1, N = 150) = .021$, $P = .884$).

Musculoskeletal injuries were the most commonly reported injuries ($n = 80$), followed by skin problems such as sunburn, poison ivy, lacerations and bee stings ($n = 43$) and chemical exposure ($n = 18$). An additional 11 participants reported cough or sore throat but the presumed cause was not identified. These symptoms could represent additional cases of chemical exposure. Ten participants reported eye injuries. There were two motor vehicle accidents, one which resulted in amputation of a leg and the nature of

Table 2 Frequency of injuries

Injury	<i>n</i>	%
Backache	46	25
Chemical exposure	18	10
Sunburn	15	8
Cuts/lacerations	15	8
Shoulder pain	11	6
Bee sting	11	6
Eye injury	10	5
Headache	10	5
Sprain	9	4
Sore throat	6	3
Falls	5	3
Fractures	5	3
Cough	5	3
Pain/numbness in hands	4	2
Poison ivy	2	1
Motor vehicle accident	2	1
Other	11	6

the injury in the other case was not identified. Two crops were significantly related to musculoskeletal injuries; strawberries ($p = .00044$) and cucumbers ($p = .017$), and oranges were significantly related to respiratory symptoms ($p = .018$). See Table 2 for a complete description of reported injuries.

For musculoskeletal injuries, the most commonly attributed cause was working long hours, followed by repetitive motions, uncomfortable position and carrying heavy loads. Bee stings, sun burns, poison ivy and cuts/lacerations were largely attributed to either not wearing protective clothing or simply an act of nature. Eye injuries were caused by injuries from branches and in one case, a welding accident. Most participants who suffered chemical exposure did not offer a reason for the exposure although two cited carelessness.

Treatment of Injuries

Back and shoulder injuries and other musculoskeletal strains were largely treated by the farmworkers themselves with rest, over-the-counter medications such as ibuprofen or topical medications such as cortisone, Bengay[®] and rubbing alcohol. Massage and application of heat or ice were also reported. One participant reported consulting a chiropractor, one reported consulting a bone healer and only one reported consulting a *curendero*. The bone healer, also known as a *huseros* is a folk health practitioner who deals with physical injuries [15]. In this case he recommended aspirin and “cream” to be applied to the injured

area. The *curendero*, a traditional folk healer [15] recommended heat, massage and an unknown medication which was taken by mouth and purchased in the US. One participant reported treating a shoulder injury with vitamins although the type and amount were not specified.

Injuries related to the skin were also mostly treated by the farmworkers themselves. Sixteen participants had sunburns severe enough to report but nine did not use any treatment and the remaining seven used over-the-counter topical medications. Bee stings were treated with over-the-counter allergy medication and ice, and in one case with saliva and in another case with an epinephrine pen. Lacerations were also largely cared for independently with bandages, topical antiseptics and over-the-counter pain relievers. Only two participants received sutures in a clinic or ED. Two cases of poison ivy were reported. One was not treated and the other resulted in a serious allergic reaction that required steroid injections.

Pesticide or chemical exposure was reported by 18 participants. Symptoms included cough, difficulty in breathing, headache and skin problems. In seven cases, there was no treatment. Two participants used rest, two used rubbing alcohol on their skin, one used topical cortisone and three others used an unidentified cream on their skin. Only three participants consulted someone else about the treatment. One was told by her mother to apply alcohol to her skin. One was advised to use magnets by a “physician friend” and one was prescribed an inhaler for breathing difficulty at a clinic. An additional 11 participants reported cough or sore throat but it is not known if these cases represented chemical exposure.

Emergency Department Treatment

Fifteen patients sought care in the ED based on seriousness of the problem and in one case the clinic was not open. In these cases, the decision to seek care in the ED appeared to be appropriate. Conditions reported included acute injuries (crushed toes, fractures, motor vehicle accidents, eye injuries) and in one case an allergic reaction. When seeking care at a clinic or ED, twelve participants reported that the physicians and nurse asked about self care of the injury and in nine cases they did not.

Discussion

This study provides important information about care of work-related injuries incurred by MSFW. The sample is thought to be representative of the MSFW in Northwest Michigan as the characteristics of this sample are consistent with those of participants who were part of a large

study of health needs of MSFW done in this area in 2006 [6]. The use of an unrestricted definition of injuries allowed participants to report on a wide range of injuries, and not just those treated by professional providers. The use of competent dual interviewers, intensive pre-survey training and daily debriefing of enumerators by the survey supervisor increased the consistency of survey procedures and overall accuracy of the results.

Non-random sampling could result in survey error from non-coverage, differential response and other unidentified selection biases. The use of cluster sampling by residential camp, rather than from employment records does reduce non-coverage and increases the likelihood that the completed sample is representative of MSFW working in Northwest Michigan. Although very few of the MSFW who were asked to participate declined, the data may have been biased in favor of those who had sustained injuries as word of the study circulated in the migrant camps. Since the injuries and reported treatment could not be validated directly, patient self-report could be inaccurate for reasons of omission, commission, or temporal displacement. In some cases, participants reported symptoms consistent with chemical exposure but did not provide their perception of the cause. Others were unable to supply the name of the medication they used for treatment of various work related injuries.

Given the labor-intensive nature of farm work and the repetitive movements used in harvesting, the high reported rate of musculoskeletal injuries is not surprising and is consistent with the results of other studies on farmworker injuries [8, 10]. While the narrow time frame under which farm work must be accomplished and the physically intense nature of farm work make these injuries an inherent risk, it remains that there is a serious need for primary prevention measures in the area of ergonomic approaches and worker education. Of particular concern are crops that require stoop labor such as strawberries and cucumbers. While it may be impossible to completely eliminate musculoskeletal injuries, there is a critical need for risk reduction efforts by way of ergonomic modifications.

Of particular concern is the number of participants who reported chemical/pesticide exposure ($n = 18$) and an additional 11 participants who reported symptoms consistent with chemical exposure (cough, sore throat) but did not indicate the cause of their symptoms. A variety of chemicals are used on farms in the US to protect crops from harm incurred by fungi, insects and other organisms which have both dermal and respiratory routes of exposure [9]. It is estimated that as many as 20,000 farmworkers are poisoned by pesticides every year, but the actual incidence may be much higher due to under-reporting and poor recognition on the part of health care providers [21]. None of the treatments employed by the participants in this sample

are considered effective and none of the participants with skin symptoms washed with soap and water as recommended. It is important that health care providers be aware of the high incidence of chemical exposure and that an exposure history be completed on all farmworkers. The following four screening questions are recommended: (a) Are pesticides being used at home or work? (b) Were the fields wet when you were picking? (c) Was any spraying going on when you were working in the fields? (d) Do you get sick during or after working in the fields? (21, p. 23).

Findings from this and other studies [12, 13] suggest that skin problems are common among MSFW and that health care professionals are rarely consulted. It is important that health care providers ask specific questions about skin problems and self care practices used and provide education on appropriate preventive and treatment measures.

Conclusion

Work related injuries were common among MSFW and most subjects relied on self treatment with over-the-counter remedies. The number of reported chemical exposures and symptoms consistent with chemical exposure, as well as inappropriate self-care treatment of chemical exposure, draw attention to the need for continued efforts for both primary prevention of exposure and optimal treatment once exposure occurs. Future research efforts should focus on ergonomic modifications and farmworker education to reduce or prevent musculoskeletal injuries. A surprising finding was the low use of folk remedies among this sample. Other studies have suggested high utilization of folk remedies and complementary/alternative health care by Hispanic Americans [14, 21]. In view of the high utilization of folk remedies reported by other authors, and the possibility of harm incurred by folk remedies, further research is needed to explore this area of self care of farm work-related injuries.

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