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Hispanic construction workers and assertiveness training

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Abstract.

BACKGROUND: Hispanic (Latino) construction workers experience disparities in occupational death and injury rates in the United States. The cultural value of respect for those in authority may hinder these workers from requesting safe working conditions from supervisors.

OBJECTIVE: To evaluate whether Hispanic construction workers in Las Vegas, Nevada found assertiveness training more useful than non-Hispanic trainees and whether or not they practiced this behavior at work after the training.

METHODS: An assertiveness training simulation was part of fall prevention classes offered to area construction workers. Eight weeks after the training, participants were interviewed by telephone about class topics they found most useful and whether or not they had made any subsequent behavior changes at work.

RESULTS: More than half of the 760 fall prevention trainees completed telephone interviews. A smaller proportion of Hispanic trainees found assertiveness training to be useful (11%) than non-Hispanics (28%) ($p \leq 0.001$). Only 2% of both groups identified practicing assertiveness at work.

CONCLUSIONS: A large proportion of Hispanic trainees valued other knowledge more highly. They may weigh job security as more important than speaking up about safety issues, which might threaten their employment. Interventions to improve safety should focus instead on improving work safety climate and engineering controls.

Keywords: Latino workers, occupational injury, prevention through design

1. Introduction

Falls, slips, and trips were responsible for the largest percentage (35%) of the occupational fatalities in construction in 2010 and 2011 [1,2]. In 2010, falls injured 15,510 construction workers and required a median 12 days away from work [3]. Nonfatal fall injuries are often serious [4,5]. Liu et al. found that falls are “a com-

mon injury mechanism of work-related traumatic brain injury” among construction workers [6].

At particular risk of injury or death are Hispanic employees who experience workplace injuries and deaths at higher rates than other groups [7]. This disparity is starkly evident in the construction industry [8,9]. Historically, falls have been the predominant cause of fatal injuries among Hispanic construction workers and account for a significant percentage of lost-time injuries as well [10].

The reasons for the disparities in injury and death between Hispanic and non-Hispanic construction workers have been attributed to miscommunication caused by language differences [11], low literacy among Hispanic workers [12], cultural issues [13,14],

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supervisor intimidation to prevent bringing up safety concerns [15], poor safety climate [16], and inadequate employer training [14,15,17], among others. Brunette reported that workers here illegally are afraid to speak up about safety due to fear of deportation [18]. Stakes also identified Hispanic worker reluctance to question authority, even when conditions are unsafe [19]. Vazquez and Stalaker characterized this reluctance as a cultural issue [20].

To address the training gap, researchers have used participatory methods to develop educational materials and approaches appropriate for this ethnic group and have proposed dissemination methods [12,18]. Sokas et al. demonstrated a lasting improvement in knowledge and attitude towards fall safety among both foreign- and U.S.-born Hispanic workers after a one hour training session with a curriculum devised by union trainers. To overcome the barrier of classroom instruction delivered in English, Hispanic trainees formed peer subgroups for translation [21].

Lavy et al. surveyed 51 of the largest U.S. construction companies to identify the methods they used to protect their Hispanic workers and found a variety of approaches to overcoming language and learning barriers, such as providing bilingual instructors and hands-on training [22]. A majority of respondents organized social events to reduce barriers between supervisors and workers.

Despite these interventions to address this health disparity, the focus is on improving training effectiveness and finding appropriate delivery methods. However, whether improved training and knowledge actually reduce fall incidence is not known due to the logistic difficulty of conducting prospective studies among a contingent workforce, whose employers and places of employment change frequently. While applying knowledge in the workplace is challenging for all workers, an additional barrier that some groups of Hispanic workers may face is the cultural belief that it is disrespectful to question an authority figure, such as a supervisor, even when that figure is wrong [20,22]. This deference is recognized as a component of the cultural concept of *respeto* (respect) [23].

Menzel (the second author of this article) and Guitez [14], in a qualitative study involving four focus groups of Hispanic construction workers, reported that participants were reluctant to request safety equipment from supervisors or to refuse to complete an unsafe task [14]. Some participants contrasted this hesitancy with that of American workers' behavior of speaking up, leading to a theme that there is a difference between the groups in workplace assertiveness.

Based on this difference, we included assertiveness training in the fall prevention curriculum we offered in 2010–2011, which was supported by a training grant. Although the training had to include the fall prevention topics specified by the Occupational Safety and Health Administration (OSHA), we included assertiveness training as well to give workers the chance to practice requesting safety equipment in a respectful way [24]. To evaluate whether there was a difference between regard for and effectiveness of assertiveness training addressing the cultural concept of *respeto*, the portion of the study reported here assessed whether or not Hispanic workers found a non-confrontational approach for communicating needs to a construction supervisor to be more useful than did non-Hispanic trainees and whether they practiced this approach in the eight weeks following training.

2. Methods

This post-training questionnaire study was part of a training program funded by an OSHA Susan B. Harwood Training Grant from 2009 to 2011. The training was free; participants received a token sum for the cost of travel to the university campus or union hall. We recruited participants through unions, state unemployment offices, flyers, Hispanic media, and word of mouth. Participant recruitment and development of materials have been reported elsewhere [25].

We designed the 5 hr curriculum to address low-literacy workers unaccustomed to passive learning (lectures). The majority of the fall prevention curriculum involved hands-on practice in a laboratory set up with potential fall hazards (e.g., scaffolds, ladders) and various types of fall protection systems. Two faculty members from the University of Nevada, Las Vegas (UNLV) Construction Management program delivered the training. Both were OSHA certified construction outreach trainers. A bilingual undergraduate construction management student provided interpretation in the class for Hispanic trainees.

The assertiveness training segment, although only 15 min in length, included brief, standardized didactic content followed by a simulation, with an instructor playing the role of a supervisor pressuring workers to complete a task with a high fall risk and several trainees attempting to request safety equipment. Participants, with cues from the instructor, suggested non-confrontational ways for the workers to negotiate with the supervisor either for needed equipment

or for time to don personal fall arrest systems (PFAS) properly. The authors used role playing due to the second author's research showing that Hispanic construction workers in Southern Nevada preferred interactive learning, story telling, and simulation [14]. In addition, the training included an explanation of the right to refuse dangerous work under OSHA regulations.

For those trainees who signed an informed consent (approved by the UNLV Institutional Review Board) and agreed to be contacted by telephone eight weeks later, we administered a 12 item questionnaire to assess perceptions of the usefulness of topics covered in the class and whether or not the training resulted in self-reported changes in safety behavior on the job. (See Appendix.) Assertiveness training was one of seven topics listed.

Three UNLV construction management students conducted all the interviews; two graduate students and one undergraduate native Spanish speaker. All data were coded and entered into a spreadsheet for analysis. Data from the follow-up interviews were analyzed in three different ways: a) non-Hispanic trainees only, b) Hispanic trainees only, and c) combined. A nonparametric Z test was used to determine the difference between population proportions in the usefulness of various topics. We used descriptive statistics to show the frequency distribution of responses and calculate percentages.

3. Results

This section reports specific results of those questions pertaining to assertiveness training, not the results of all questions. Of the 760 fall prevention trainees, 180 were Hispanic, 70 of them members of the Laborers' International Union of North America local. The remainder did not identify any union membership when signing in. Three hundred and fifty trainees completed telephone interviews: 249 non-Hispanic and 101 Hispanic. Although a larger percent of non-Hispanic than Hispanic trainees signed consent forms (88.8% versus 81.8%), we were able to reach a larger proportion of Hispanics than non-Hispanics (68.2% versus 40.9% success rate). Reasons for inability to complete interviews for those who consented to participate included: a) telephone number provided was out of service; b) trainee said it was inconvenient to talk because he or she was at work; and c) person answering the telephone hung up.

Of the seven possible topics, 11% of Hispanic trainees found assertiveness training to be useful, com-

pared to 28% of non-Hispanic trainees, a significantly larger proportion ($p \leq 0.001$). See Fig. 1. Of the 208 non-Hispanic and 88 Hispanic trainees who answered the question about types of changes made in fall prevention behavior, 2% of both the non-Hispanic and Hispanic trainees identified changes to assertiveness. "How to talk to people better and be more assertive" one Hispanic trainee gave as an example of a behavior change. "Ask for safety equipment before going to work" a non-Hispanic trainee said.

The majority of trainees improved their overall fall prevention knowledge and made changes to their fall prevention behavior. A greater proportion of Hispanic trainees reported avoiding fall accidents than did non-Hispanic trainees (71% versus 45%). Five non-Hispanic trainees and one Hispanic trainee reported falling at work after the training.

3.1. Limitations

Although the instructors followed a written script and rehearsed their role prior to the beginning of the classes, there were threats to fidelity. There were two different instructors, one for English speakers and one for Spanish speakers. In the classes for Hispanic trainees, the interpreter, not the instructor, assumed the simulation role of supervisor. There may have been response bias in self-reported behavior change; there was no external validation. Trainees who were unemployed would not have had an opportunity to practice assertiveness, which could have lowered the number of trainees reporting using it at work. We did not collect demographic data from participants.

4. Discussion

Reports in the literature and our initial qualitative study indicated that Hispanic cultural issues might be associated with some of the disparity in construction injuries and deaths. Lipscomb and associates have speculated that assertive minority workers might reduce general health risks by speaking up [26]. Therefore, we included assertiveness training in fall prevention classes designed for construction workers in Southern Nevada as an innovation in the OSHA-prescribed curriculum. However, the relatively low percent of Hispanic trainees who identified assertiveness training as useful indicates that they did not value this knowledge. One possible reason is that this study was conducted during a prolonged period of high con-

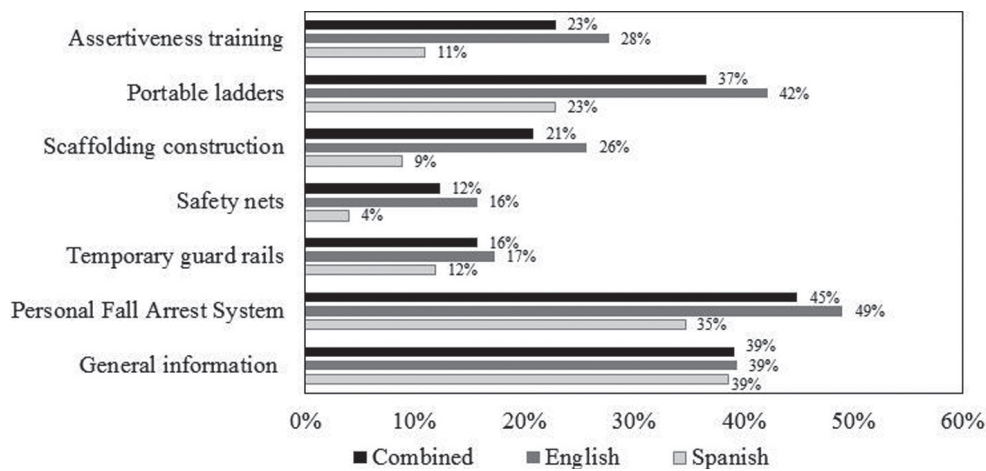


Fig. 1. Most useful topic.

struction unemployment in Southern Nevada. Hispanic workers perceive intense competition for jobs [14,15] and may value job security over speaking up about safety issues, an action that might threaten their employment [18].

However, providing assertiveness training, no matter how successful in changing behavior, may be an inadvisable intervention for improving worksite safety, as it makes the worker instead of the employer responsible for safety. The fact that participants reported falling after training points to the limitations of behavior change strategies. A better intervention focus is on employers to improve the work safety climate [16] and work organization [27] at construction sites. This level of intervention is likely to be more effective for preventing falls than additional worker training, which Liu et al. recommended [6].

Although there is insufficient research evidence to conclude that occupational safety training has a large impact on reducing injuries and illnesses [28], dissemination of safety training materials developed in participation with Hispanic construction workers will at least bring their training on par with that delivered to non-Hispanic workers. However, interventions focused on behavior change at the work site will never be as effective in reducing hazards as engineering and administrative controls [29]. These include construction hazard Prevention through Design (PtD) [30] and Building Information Modeling (BIM) [31].

Investigators have found a relationship between building design and fatal construction accidents [32, 33], emphasizing the need for PtD. This approach addresses occupational safety and health needs in the design phase to eliminate or reduce hazards during the

construction phase [34–36]. For example, to eliminate the fall hazard for roofers, workers can construct the roof on the ground and use a crane to lift and install it on the house. Proper design can reduce not only fall hazards, but also risks for electrical shock, cave-ins, struck by objects, caught in- or -between and other accidents. The National Institute for Occupational Safety and Health (NIOSH) is leading a research initiative to increase the use of this approach [37,38].

The BIM approach identifies anticipated hazards and determines the type and estimated cost of the safety equipment required during construction while in the planning phase of building projects [39]. Geographical information systems, BIM based 4D Computer Aided Design, virtual design, and other models can also be used to plan for construction safety [40–42].

Engineering controls are upstream approaches to reduce construction accidents. As NIOSH notes, the “design aspect is the missing piece in a holistic approach to enhance construction worker safety” [38]. Workers, whether or not they are Hispanic, need not only training in PFAS use, but also the presence of appropriate anchorage points, which should be specified during the building’s design.

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Post-training telephone questionnaire

1. In what language did you take fall prevention training at UNLV?
 - a. English
 - b. Spanish
2. During the fall prevention training, which of the following topic(s) did you find most useful for your work?

Read from the list below to cue them.

 - a. General Information about Fall Prevention
 - b. Fall Prevention Options and Use of Personal Fall Arrest Systems
 - c. Temporary Guard Rails
 - d. Safety Nets

- e. Scaffolding Construction
 - f. Portable Ladders
 - g. Assertiveness Training
3. Do you think you improved your fall prevention knowledge and skills by completing the training?
 - a. Yes
 - b. No
 4. Are you involved in a job which needs fall prevention knowledge and skills?
 - a. Yes
 - b. No
 5. Have you made changes in your fall prevention behavior as a result of the training?
 - a. Yes
 - b. No
 6. If you answered yes, please describe some changes you have made: _____
 7. Have you been involved in any of the situations at your job that were shown in class (for example, working on ladders or at heights)?
 - a. Yes
 - b. No
 8. If yes, did you handle the situation as it was shown in class or another way?
 - a. Yes, as described in class
 - b. Used a different way (Describe)_____
 9. Did you think that you have avoided a fall accident due to the knowledge gained from the training?
 - a. Yes
 - b. No
 10. If yes, how many fall accidents have you avoided due to the training? _____
 11. How many times have you fallen at work after the training? _____
 12. Did your employer value the fall prevention training that you took at UNLV?
 - a. Yes
 - b. No