

Tradeswomen's Perspectives on Occupational Health and Safety: A Qualitative Investigation

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Qualitative research methods were used to determine the health and safety concerns of women employed in the construction trades. Major categories of concern were identified, including: 1) exposure to chemical and physical agents; 2) injuries from lifting/bending/twisting, falling, and lacerations; 3) lack of proper education and training; and 4) the health and safety risks related specifically to tradeswomen. Many of the issues identified by the workers are amenable to change through either engineering, behavioral, or administrative interventions. © 1996 Wiley-Liss, Inc.

KEY WORDS: health and safety, construction, women, qualitative methods

INTRODUCTION

It is a well known fact that employment as a construction worker may have negative health consequences. The 1980-1989 fatality rate in the U.S. construction industry was 3.5 times higher than that for all manufacturing industries [Kisner and Fosbroke, 1994]. Given the level of risk associated with construction work, it is surprising that little research has been conducted focusing on the health and safety concerns and practices of construction workers. In particular, health research on female construction workers is virtually nonexistent.

In 1990, approximately 198,000 women were in the construction labor force, or about 2% of the construction workforce [U.S. Bureau of the Census, 1990]. It has been estimated that by the year 2005, the overall U.S. workforce will comprise 47% female workers, and many of these women will probably chose male-dominant non-traditional careers [U.S. Department of Labor, 1991]. Once she has chosen, however, a woman may find herself faced with a

number of obstacles, including lack of acceptance by male co-workers, lack of support from family and friends, and the necessity of adjusting to the dominant "male culture" [Walshok, 1981; LeBreton and Loevy, 1992]. In addition to these obstacles, women in the trades report other important health and safety concerns, some of which men in the trades may experience and some of which they may not. Reported here are the findings from a qualitative investigation designed to illustrate tradeswomen's health and safety concerns.

MATERIALS AND METHODS

Sample Selection

Purposeful rather than probability sampling was used to obtain the study sample [Patton, 1990]. The logic of purposeful sampling lies in selecting information-rich cases for study from which the researcher can learn a great deal about the particular issue, rather than selecting a truly random and statistically representative sample from which to generalize findings. All the women participating in this study were either currently employed, or had been employed in the construction industry or in a closely related blue-collar/male-dominated trade (i.e., auto mechanics, truck driving). They were from many regions of the United States and represented tradesgroups such as carpenters, welders, electricians, plumbers, laborers, and millworkers.

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Accepted for publication June 14, 1995.

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Data Collection

Due to the exploratory nature of this investigation, it was decided that qualitative methods including focus groups, in-depth interviews, and open-ended self-administered questionnaires would be the most effective method of data collection. Qualitative methods permit the researcher to understand the world as seen by the respondents rather than predetermining it through a priori selection of questionnaire categories [Patton, 1990]. A total of 20 women participated in four focus groups; in-depth phone interviews were conducted with five female construction workers; and self-administered open-ended questionnaires were completed by 26 tradeswomen, for a total sample of 51 respondents.

Respondents were asked the same seven questions. Two asked about job-related health and safety concerns; "What do you believe are the 2 or 3 most important health and safety issues you face on the job?" and "Are there any special health and safety concerns for women working in the trades?" The terms health and safety were not defined, allowing for broader definitional possibilities on the part of the respondent. The tradeswomen's answers to these questions are presented in this paper.

Data Analysis

Content analysis was used to identify consistent themes in the data. To reduce the subjectivity of the interpretations and conclusions, the second author reviewed the raw data to determine level of agreement with the categories identified by the first author [Knodel, 1993]. When discrepancies emerged, discussions ensued and consensus was attained.

RESULTS

The major concerns identified by the respondents are presented below. Each category is described, and comments are presented to exemplify each category. Due to space limitations, only one or two comments were selected as illustrations.

Exposure

Exposure to physical and chemical agents was of greatest concern to these workers. Some examples of comments are:

"My concern is the contractors, what products they are using? Do they have their safety datasheets on hand? Are they actually using proper ventilation procedures? Are they being aware of . . . cigarettes, and open flames, where they can create some kind of reaction?"

"I'm really concerned about . . . all the different dusts that

we're exposed to. I think that (dust) would be my highest priority because those are the kind of things that you don't really notice 'til the end of the day. It's nothing that affects you at that particular time."

Injuries

Back injuries sustained as a result of lifting, bending, and twisting were mentioned by a majority of the workers as a major health and safety concern. They also said that because of these risks, they need to be aware of their own limitations, they must learn proper lifting techniques, and they must ask for assistance when a load is too heavy. For example:

" . . . how to lift and how to bend . . . I didn't learn this until I ended up on physical therapy. I think that it's something that we really need to look at, especially for individuals going into non-traditional work, is the way you lift and bend and move."

Eye injuries and injuries incurred as a result of falling from heights or from falling objects, and laceration of fingers and hands were also mentioned. The workers said that they addressed their concerns regarding these types of injuries by; 1) learning how to use equipment properly (*" . . . the crew should be conscious enough to say, 'if you're not familiar in working with this particular power tool, let me show you how to use it first or show me that you know how to use it first before we cut you loose with it'."*); 2) by focusing on not becoming complacent with tools, (*" . . . we had an electrician get shocked 2 weeks ago. . . . He failed to take his meter and check to see if it was energized. . . . That's simply complacency . . . you get used to it, you do it everyday and you take it for granted."*); and 3) by remembering that elements on the job can hurt or kill you (*" . . . I learned to respect it [electricity]. I wasn't afraid of it, but I know it can kill me."*)

Education and Training

The workers stated that the lack of workplace safety education and training was of great concern to them. They stated that the level of training they received was a direct result of supervisor/co-worker influence on the availability of training and their encouragement to employees to participate in it. For example, workers stated that due to the negative attitudes of workers and supervisors, opportunities to learn through practice may be withheld and apprentices (particularly women) are not always provided with information and training on how to work correctly and safely.

Some of the women felt that personal observation and close attention on the part of the apprentice was often the only way of learning methods used by others, and that by

using only observational methods they were not being trained properly. This is a particularly important issue for women who find themselves assigned to tasks that do not provide them opportunities to learn and practice their skills. Also, because women tend to have less upper body strength than men, they had to be creative and develop ways that made the job possible and safer for a woman. For example, one woman said;

"You learn what not to do. They (male workers) have upper body strength where we have it (strength) from here (top of head) to our toes . . . the guys will . . . grunt and groan and struggle . . . and I'll sit down, put my feet on one side (of the wrench) and pull on the other. . . . That's what I consider using my brain instead of my brawn."

Some workers also expressed a concern that many of their co-workers did not seem interested in participating in on-the-job safety education and training, and that some supervisors and bosses did not necessarily encourage it. This sentiment is reflected in the following comment.

"Many don't want to go to safety meetings. I don't know if it's a machismo thing or what . . . but then there's always the contractor or boss breathing down your neck, saying, 'How come this (work) wasn't done?' The boss doesn't say, 'You'd better go to that safety meeting because I don't want my worker's comp bill going up this year'."

Gender-Related Issues

The final major category identified from the data pertained to being a woman working in a non-traditional vocation. The four issues of greatest concern were the lack of protective clothing and tools designed to fit women, the need to overcompensate in their work, the lack of clean (or any) restroom or shower facilities, and psychosocial stressors.

Protective clothing and tools. Improperly fitting gloves, boots, hard hats, overalls, and handtools were considered to be occupational hazards. One woman welder said, *"They gave me a welding leather jacket that was a foot longer than my hand, I had to roll it up. And they said that they couldn't order anything smaller. They gave me gloves, humongous, I couldn't even pick anything up."* Another woman's story reflects the frustration felt by these women: *" . . . you can be hurt. . . . If you happen to have a pair of gloves on and they're too big . . . , that glove could get wrapped up in a fan-belt or. . . anything . . . with moving parts . . . you can get hurt . . . if your clothing is not fitted right."*

Overcompensation. The workers stated that often they felt they had to overcompensate in their work to prove them-

selves to their co-workers and bosses. For example, the workers said things like *" . . . a lot of times, I feel like I've got to do this because I'm a girl because if I don't they're going to say, 'See, whad I tell ya, she's a girl, she can't lift it'."* Related to this, some women said that a woman asking for help was frowned upon more than a man asking for help and that this was a real problem. It was believed that *"Women injure themselves more than the men because they refuse help, and they are not allowed to ask for help and it's a much bigger deal if a woman asks for help."*

Facilities. The availability and cleanliness of restroom facilities was also a major concern. Participants said that facilities, when available, were filthy or were some distance from the site. The lack of water for washing-up was a problem, for a variety of sanitary reasons. One woman suggested that simply having a bucket of chlorinated water for hand-rinsing before and after visiting the porta-john/jane would be helpful. Most women agreed that this problem also extends to male co-workers as reflected in this comment, *"I think the guys have problems also, but they take it for granted. They accept the conditions as part of this rough world that they function in. And also, many times if there is no near bathroom, they'll just pee . . ."*

Psychosocial stressors. Finally, job security, personal safety (e.g., being the only woman on the job site), and the need to "fit in" present a source of job-related stress for women working in the trades and also affect their attitudes toward health and safety. It appears that many tradeswomen support themselves and their families, yet there is an overall misconception that tradeswomen can rely on their husband's salary for support. One respondent stated, *"I've been around the older journeymen and a few others who really don't want to see women out there. . . . They need to understand that we're there, we're just as hungry, we have just as many financial obligations and, most important, is that we have a lot of self-worth when we go out on these jobsites."* Some women noted that the hold on their jobs is more tenuous than that of the more senior male workers and that, as women, they cannot bring up issues of worksite safety because it might threaten their jobs. For example, *" . . . women in the construction trade can't go out there and complain, we just have to bite our lip and deal with it if we want to keep our job."* Job security may also be affected by misconceptions about interactions between male and female workers. One worker presented this problem, *"he [the foreman] hired her very quickly. Until the wife showed up. And then it changed. . . . she got every dirty job that was there. He more or less forced her to quit."*

Personal safety is another important health and safety issue for tradeswomen. Most of the workers noted that often they were almost always the only woman construction worker on the job site, and being the only woman presents

the threat of sexual harassment, and possible assault as relayed by one woman, "*. . . they [co-workers] were starting to talk really dirty. . . . It was filthy stuff. Plus they were starting to touch me. I was the only woman on the job. I was the steward, but I was the only woman on the job.*"

Finally, fitting in with the rest of an otherwise male crew and dealing with the construction environment presented a challenge to all of the respondents. Even if women like their male co-workers and feel a part of the "gang," the struggle to fit in continued. "*. . . the crew I'm on now . . . is the best crew I have ever worked with . . . they treat you like one of them. But if they can find something, they'll find it.*"

DISCUSSION AND CONCLUSIONS

Issues of exposure to physical and chemical agents and potential injury ranked highest on the participants' list of concerns. This is not surprising in light of the research showing that the lack of control over an exposure typically results in a higher perceived risk [Slovic, 1988]. As evidenced by the comments made, the workers were concerned with not only their own awareness of exposure risk (increased individual control) but also that of their employers and co-workers (low individual control). It is likely that, if asked, men would also rank exposure high among their concerns.

Lack of education and training was highly ranked by the participants. This included learning the importance of being aware of one's surroundings, how not to depend on others for safety, and how to use and respect tools. As with many vocations, training in the construction trades has both an informal and formal component. The formal component for skilled workers consists of many hours of apprenticeship training in classrooms or in controlled field environments. The informal component occurs on a daily basis and is in many regards the way new workers learn their chosen trade. Most men actually begin this informal training process when they are very young, with male role-models teaching them about tools and mechanical processes. Women may not have this kind of informal training while growing up. Unfortunately, not all women who desire special training in the trades have the opportunity to attend, for instance, a pre-apprenticeship program that would give them additional experience with tools and an understanding of the hazards in the construction industry prior to entering the workforce. In a survey of tradeswomen working in the Chicago area, 54% reported that not being given proper training was a major problem and was a major reason for leaving the trades [LeBreton, 1992]. It is likely that some tradespeople believe that the only reason women are being hired is to meet quotas. If women come to the jobsite without proper training, their presence at the worksite is less likely to be accepted, the quota view may be reinforced, and they might not re-

ceive the much needed on-the-job training, resulting in high turnover among women or, even worse, job-related injury or death.

Health and safety issues relating specifically to being a woman in the trades presents a number of challenges both for tradeswomen and for the construction industry in general. Clearly, having properly fitted personal protective equipment, tools, and clothing is a key health and safety issue that needs to be addressed. There are numerous outcomes, both acute (i.e., falls, lacerations) and chronic (i.e., work-related musculoskeletal disorders, low back pain) that could result from these problems. Manufacturers base production on market needs and likely will not alter production if they do not perceive that there is a viable market for their goods. The need for women's and non-average-sized men's clothing must be expressed to manufacturers by contractors, union officials, and health and safety professionals, as well as female construction workers. This particular concern may be a good area for targeting intervention efforts.

The issue of clean restrooms has been expressed by women in other studies, where 80% of respondents have encountered worksites without toilets or dirty toilets [Le Breton, 1992]. This concern has both aesthetic and health aspects. That is, there is evidence to show that the occurrence of urinary tract infections may be reduced by completely voiding the bladder on a regular basis [Foxman and Frerichs, 1985]. Health and safety professionals/researchers are in a position to emphasize the importance of this issue to decision makers.

Finally, the respondents identified a number of psychosocial stressors on the job. These stressors have been noted by other authors studying women working in construction [Ferguson and Sharples, 1994] as well by authors studying women attempting to work in other traditionally male-dominated fields [Armstrong et al, 1993]. The overall impact of these factors on the health and safety of women working in non-traditional jobs is unknown. Clearly, as women enter the workforce in greater numbers and continue to desire jobs in these fields, more systematic efforts need to be made to identify and ultimately remedy psychosocial stressors.

Since construction is expected to be one of the few areas with future blue-collar employment potential, it seems paramount to have a ready and able pool of men and women who have been both skill and safety trained. The information obtained in this qualitative investigation will be used to collect data from a larger, more representative group of female and male construction workers. Ultimately, this information should provide us with a better idea of where best to direct intervention efforts to make the construction site a healthier and safer place for both female and male workers.

ACKNOWLEDGMENTS

We thank Pamela Kidd and Beth Whelan, who assisted in the design and data collection process, and Liz Ward,

Paul Schulte, Steve Sauter, and Ted Scharf for their thoughtful reviews of draft manuscripts. Finally, we owe a great deal of appreciation to the hard-working women of the Rocky Mountain Tradeswomen's Network, The Cleveland Hard-Hatted Women, the Great Oaks Vocational Apprenticeship program (including Jane Bledsoe and Bob Scarborough), The Woman's Carpenter Committee of the District Council of New York, the women attending the Kansas City Tradeswomen Summit, and Rose Kemp from the Woman's Bureau in the Department of Labor. This investigation would not have been possible without their willingness to share their concerns and stories.

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