

Addressing Health and Safety Concerns for Tradeswomen in the Construction Industry

Hannah Curtis¹, Hendrika Meischke², Nancy Simcox¹, Sarah Laslett³, Noah Seixas¹

¹Environmental and Occupational Health Sciences, University of Washington;

²Health Services, University of Washington; ³Labor Education and Research Center, University of Oregon



Abstract

- Construction workers face many health and safety hazards including slips/trips/falls, toxic chemicals, and musculoskeletal disorders. Women, who represent only 3% of skilled trades workers, experience additional risks related to sub-optimal personal protective equipment (PPE) and a culture that can be discriminatory to openly hostile. As construction opportunities for women increase, better understanding of how their unique workplace stressors affect their well-being is needed. Our study explores tradeswomen's current workplace hazards, with a goal of reducing their risks through effective program development.
- Data from formative focus groups were analyzed and informed creation of a conceptual model on occupational and psychosocial stressors for tradeswomen. This framework then guided development of a questionnaire, which was completed by ~300 workers throughout WA. Researchers analyzed the association between psychosocial hazards and the injury and stress outcomes using logistic regression.
- Study findings reveal myriad health and safety challenges tradeswomen face in the male-dominated industry. Focus groups identified risks including a dangerous work environment, sexual harassment, gender discrimination, overcompensation, and poor work/life balance. Survey results support these themes, showing that gender is a significant predictor for injury and perceived stress, with higher risks for women.
- Tradeswomen's condition is improving, but the industry lags in supporting their health and safety needs. Projected future shortage of skilled trades workers and the national focus on gender equity underscore the importance of increasing women's representation. As a result of this study, we are developing a pilot mentoring program to empower women apprentices to address their worksite stressors.

Methods

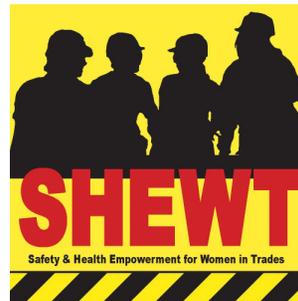
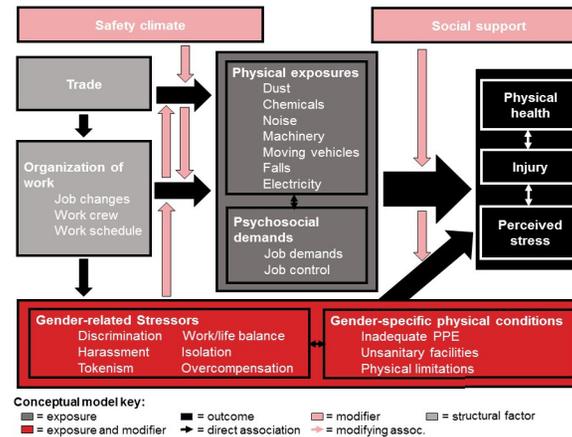
Preliminary Focus Groups

- We held 4 focus groups in 2015 with 19 tradeswomen and 6 tradesmen from a variety of crafts in Seattle, Spokane, and Vancouver, WA.
- Data were collected anonymously, transcribed, analyzed by two independent researchers, and were used to create a conceptual model, which informed development of our questionnaire.
- Themes Identified:
 - Physical hazards: Dangerous work environment (e.g. slips/trips/falls, electricity, noise, chemical exposure, etc.); Chronic injuries; Complacency; Management prioritizing production over safety
 - Psychosocial hazards: Job insecurity; No paid sick leave; Inadequate bathrooms; Macho culture
 - Women-specific hazards: Inadequate PPE; Physical limitations; Sexual harassment; Gender discrimination; Tokenism; Overcompensation; Poor work/life balance; Fear of reporting concerns

Questionnaire

- 291 participants
 - 198 women, 93 men
- Self-administered surveys
 - Online, phone interview, or paper copy
 - Collected during 2015-2016
- Survey content:
 - Outcomes: injury, stress
 - Occupational exposures
 - Mediators: social support, safety climate
 - Gender-Specific Stressors: PPE, harassment, discrimination, isolation, tokenism

Conceptual Model



"[Women and minorities] are not told how to do something safely, but left out to fend for themselves because there is a group of people who don't think they should be there."

"The harassment never really stops; you learn to ignore it. They will take the first opportunity available to replace you."

Results

Table 1. Demographics

	Women (n 198)	Men (n 93)
	%	%
Trade		
Carpenter	10	8
Electrician	23	17
Laborer	31	43
Pipe Trades	11	19
Sheet Metal	7	6
Other	18	6
Level in trade*		
Apprentice	37	57
Journey	63	43
Age (mean yrs)*	42	39

*Men/Women significantly different, p<0.05

Key Findings

- Women were significantly more likely than men to have high levels of stress and to report at least one injury in the past year
- Women were more likely than men to report ill-fitting PPE
- Women had a fear of reporting:
 - Of women who did not feel comfortable asking for better PPE, the majority listed "fear of being labeled as complainer by coworkers" or "fear of layoff" as the primary reasons
 - Women were less likely than men to report injuries, citing "fear for layoff"

"They don't make harnesses for women!"

Table 2. Logistic Regression Models for Psychosocial Variables (Women)

Variable (reference category)	Injury (yes) OR	Stress (>2.2) OR
Overcompensation (low)		
High	4.23***	1.94
Work/Life Balance (good)		
Poor	1.45	7.78***
Age Discrimination (no)		
Yes	2.17	9.77***
Gender Discrimination (no)		
Yes	2.71**	2.46
Bullying (no)		
Yes	2.28	2.43
Isolation (low)		
High	1.53	2.08
Safety Climate (high)		
Low	1.64	2.50
Social Support (high)		
Low	0.81	4.00**
Sexual Harassment (low)		
High	2.13	2.40
Tokenism (low)		
High	1.21	0.76

*p<0.05 **p<0.01 ***p<0.001
 [Separate model for each variable. All models controlled for trade, journey/apprentice, and age]

- For all workers (women and men), the odds of reporting an injury was significantly associated with gender discrimination, bullying, high levels of overcompensation, and low safety climate.
- For all workers, the odds of having high stress was significantly associated with poor work/life balance, age and gender discrimination, bullying, and low levels of safety climate and social support.

"It's very stressful to feel like you have to prove your worth repeatedly."

Conclusion and Next Steps

- Our data suggest that gender-related stressors (including overcompensation, discrimination, poor work/life balance, and fear of reporting) play an important role in determining tradeswomen's risk for negative health & safety outcomes.
- Mentoring has been shown to be an effective way for new and vulnerable workers to learn how to deal with hazards in the workplace and feel supported in advocating for their needs.
- Phase II of SHEWT involves a **six-month pilot mentoring program** that trains 15 journey-level women and men to mentor ~30 women apprentices from five trades. Mentors will help mentees problem solve their workplace health and safety concerns, and develop their communication and leadership skills through proactive approaches.

Acknowledgements

This study is a collaboration between the University of Washington Department of Environmental & Occupational Health Sciences, Washington Women in Trades, the Labor Education & Research Centers at South Seattle College and University of Oregon, and the Washington State Building and Construction Trades Council's PACE program.



The authors have no conflicts of interest to disclose.

Funding and support provided by the Department of Labor & Industries