# Disparities in health and safety experiences in a multicultural and multilingual high-hazard workforce

Allison Crollard, Rick Neitzel, Carlos Dominguez, Noah Seixas University of Washington School of Public Health, Department of Environmental and Occupational Health Sciences

# Background

- Immigrants may be at higher risk of occupational injury and illness as a result of barriers to communication and discriminatory attitudes
- . Study aimed to understand health and safety experiences and perceptions of discrimination of a diverse workforce in a high-hazard industry
- . Interested in differences between supervisors, workers native to the US, and workers born outside of the US

## Table 1: Nativity of workforce

	Born in US	<b>Born outside US</b>
Supervisors (n=4)	3 (75%)	1 (25%)
Workers (n=42)	13 (31%)	29 (69%)

#### Table 2: Workforce characteristics

	Supervisors (n=4)	Workers born in US (n=13)	Workers born outside of US (n=29)
Speak English well	3 (75.0%)	13 (100%)	6 (20.7%)
10 or more years in US	3 (75.0%)	13 (100%)	21 (72.4%)
40 or older	4 (100%)	11 (84.6%)	17 (58.6%)
5 or more years working for company	4 (100%)	17 (58.6%)	19 (65.5%)

## Methods

- . All of the site's 46 yard workers and supervisors were surveyed
- . Sections from the Job Content Questionnaire (psychological job demands and coworker social support),
- . Safety climate scale
- . Health, safety and work environment indicators (i.e. exposures, injuries)
- . ANOVA analyses and Fisher's exact tests were used to evaluate differences in questionnaire responses based on nativity
- . All supervisors were grouped into one category due to small sample size, while workers were divided into two groups based on US nativity
- . Forward stepwise regression analysis used to estimate associations between immigrant status/related factors and indicators of work environment and health and safety
- . Informal interviews with workers and observations were also conducted

# Results



## Table 3: Proportion of employees indicating exposures more than half of work days

	Supervisors	Workers born in the US	Workers born outside the US	
	(n=4)	(n=13)	(n=29)	p value
Dust	0.75	0.46	0.51	> 0.20
Chemicals	0.00	0.23	0.13	> 0.20
Traffic	0.50	0.92	0.41	0.04
Heights	0.00	0.46	0.23	> 0.20
Noise	0.25	0.62	0.64	0.02
Machine hazards - trap/crush	0.00	0.38	0.51	0.01
Repetitive motion	0.25	0.69	0.49	> 0.20

### Table 4: Work environment and health and safety indicators

		Workers born	Workers born	
Mean (SD) scores*	Supervisors (n=4)	<b>in the US</b> (n=13)	outside the US (n=29)	p value
Language affects treatment at work	2.25 (1.89)	2.50 (1.78)	3.28 (1.36)	> 0.20
Ethnicity affects treatment at work	2.75 (2.06)	2.50 (1.78)	3.62 (1.15)	0.07
Comfortable raising H&S issues	5.00 (0.00)	4.15 (1.21)	4.14 (0.99)	> 0.20
Language is a barrier in H&S communication	2.50 (1.91)	2.92 (1.66)	3.59 (1.30)	> 0.20
Safety climate score	4.58 (0.65)	3.95 (0.97)	3.49 (0.67)	0.02
Psychological job demands	3.60 (0.23)	3.75 (0.59)	3.43 (0.83)	> 0.20
Coworker social support	4.38 (1.91)	3.88 (1.06)	4.14 (0.68)	> 0.20
Proportion of employees				
Comfortable refusing work	1.00	0.69	0.83	> 0.20
History of refusing work	0.75	0.38	0.28	0.18
Injured in last 12 months	0.00	0.23	0.34	> 0.20

## Table 5: Regression model estimates for health and safety indicators

Different treatment at work due to language*		Different treatment at work due to ethnicity*		Safety climate score**	
Coefficient (SE)	p value	Coefficient (SE)	p value	Coefficient (SE)	p value
1.92 (0.89)	0.036	1.72 (0.95)	0.078	4.96 (0.49)	<0.001
2.26 (0.51)	<0.001	2.44 (0.55)	<0.001	4.17 (0.28)	<0.001
3.09 (0.45)	<0.001	2.97 (0.48)	<0.001	3.80 (0.25)	<0.002
3.19 (0.79)	<0.001	3.65 (0.85)	<0.001	3.72 (0.44)	<0.00
4.02 (0.89)	<0.001	4.18 (0.95)	<0.001	3.34 (0.49)	<0.00
2.34 (0.78)	0.005	2.97 (0.84)	0.023	4.02 (0.43)	<0.00
3.17 (0.60)	<0.001	2.50 (0.64)	<0.001	3.65 (0.33)	<0.00
3.27 (0.42)	<0.001	3.18 (0.45)	<0.001	3.57 (0.23)	<0.00
4.10 (0.37)	<0.001	3.71 (0.40)	<0.001	3.19 (0.21)	<0.00
2.85 (1.03)	0.009	2.93 (1.11)	0.012	4.50 (0.58)	<0.00
3.68 (1.02)	0.001	3.46 (1.09)	0.003	4.12 (0.57)	<0.00
	Coefficient (SE)  1.92 (0.89)  2.26 (0.51)  3.09 (0.45)  3.19 (0.79)  4.02 (0.89)  2.34 (0.78)  3.17 (0.60)  3.27 (0.42)  4.10 (0.37)	Coefficient (SE)         p value           1.92 (0.89)         0.036           2.26 (0.51)         <0.001	Coefficient (SE)         p value         Coefficient (SE)           1.92 (0.89)         0.036         1.72 (0.95)           2.26 (0.51)         <0.001	Coefficient (SE)         p value         Coefficient (SE)         p value           1.92 (0.89)         0.036         1.72 (0.95)         0.078           2.26 (0.51)         <0.001	Coefficient (SE)         p value         Coefficient (SE)         p value         Coefficient (SE)         p value         Coefficient (SE)           1.92 (0.89)         0.036         1.72 (0.95)         0.078         4.96 (0.49)           2.26 (0.51)         <0.001

# Discussion and conclusions

- . Some evidence to suggest that immigrant workers have different health and safety experiences than native US-born workers or supervisors
- . Experience more health and safety hazards
- . Are less likely to be trained
- Perceive work environment to be less accommodating for working safely
- . More likely to experience discrimination
- . Limited significance due to small sample, one worksite
- Regression analysis reveals that non-native workers are more likely to report that language and ethnicity/race factor into how they are treated at work and assign lower safety climate scores than native US born workers or supervisors
- . This effect is intensified among those with limited English abilities and among those who have worked 5 or more years at the company
- Results from analysis were reflected in discussion with workers and observations at the worksite
- . Many immigrant workers stated they were hesitant to raise health and safety issues for fear of being treated as "difficult" by management and supervisors
- Interactions among employees seemed to be often divided along ethnic/racial lines while working and during breaks
- . Many workers expressed frustration with communication barriers as a result of the multi-lingual workforce
- . The results reinforce the importance of taking nativity/English ability/diversity into consideration when developing health and safety initiatives
- . Encouraging participation of all worker groups in health and safety activities
- . Promoting efforts to improve communication between groups and address discrimination issues

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