

Injury among nurses: Epidemiology and etiology

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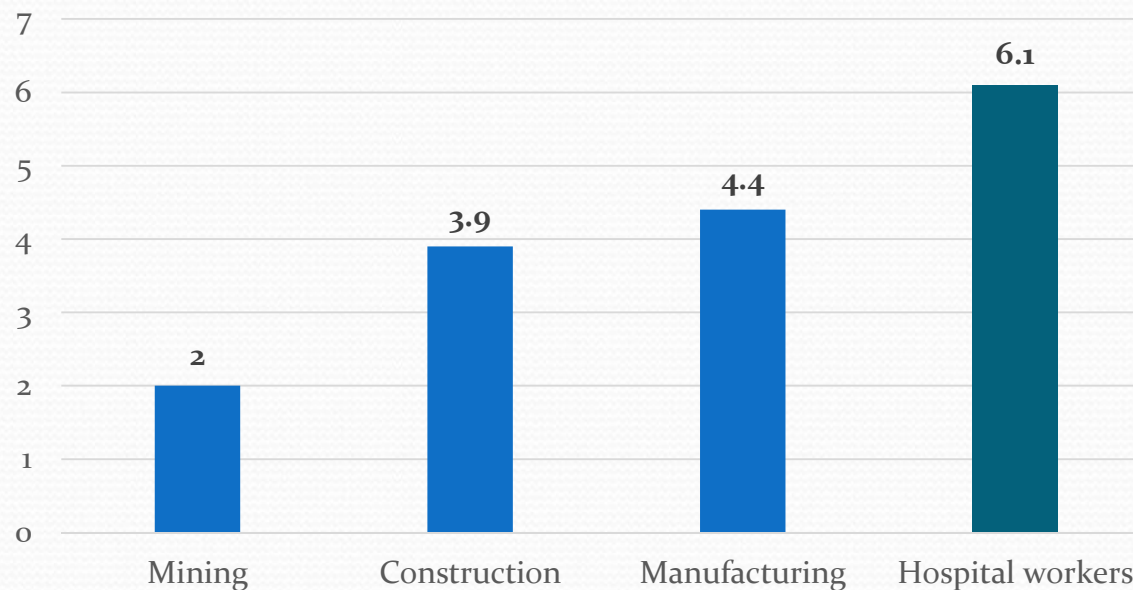
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Work Related Injuries Workshop
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Health care: a high-risk occupation

Annual non-fatal injuries at work,
per 100 workers



Bureau of Labor Statistics, 2012

Injury rate varies by job type

	Injury rate: per 100 FTE: nurses	Injury rate per 100 FTE: aides	Aide-nurse injury ratio
Injuries with days away	7.2	11.3	1.57 (95% CI 1.3-2.0)
Injuries with no days away	5.7	9.9	1.74 (95% CI 1.4,2.2)
All injuries	12.9	21.2	1.65 (95% CI 1.4,1.9)

Boden et al, 2012

Most common types of injuries (per 100 FTE nurses)

Body part	Cause	Nature
<ul style="list-style-type: none">• Back (2.9)• Neck/shoulder (1.1)• Arm/hand (0.9)• Legs (0.6)	<ul style="list-style-type: none">• Lift/exertion (4.7)• Slip/fall (1.1)• Struck by (0.7)• Sharps (0.08)• Violence (0.05)	<ul style="list-style-type: none">• Pain/inflammation (3.1)• Sprain/strain (1.8)• Contusion (1.0)• Sharps (0.05)

Boden et al, 2012

Injury risk varies by type of work

Injuries per 100 FTE nurses, by unit type

- Stepdown unit: 14.34
- Operating room: 12.52
- Float pool: 11.38
- Adult ICU: 8.41
- Obstetrics: 7.71
- Emergency department: 7.32
- Med/surg (adult): 6.10

Boden et al, 2012

Risk factor: job tasks

*Odds ratios for back pain among nurses,
by number of daily manual lifts*

Number of manual patient lifts per day	Percent of nurses exposed	Odds ratio for back pain
0	19%	1.0
1 to 5	43%	2.0 (95% CI 1.4, 2.8)
6 to 10	22%	1.7 (95% CI 1.1, 2.7)
11 or more	16%	7.5 (95% CI 5.2, 10.8)

Landry et al, 2008

Risk factors: job characteristics

Odds ratios: risk factors for back injury among nurses

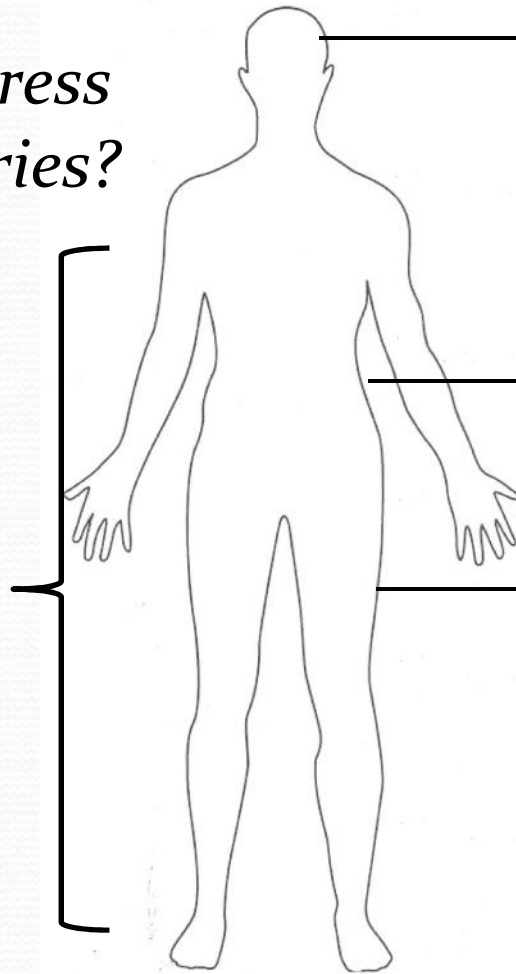
- Mandatory overtime: 1.55 (95% CI 1.03, 2.31)
- Working on days off: 1.41 (1.01, 1.97)
- Working 13+ hours straight: 1.87 (1.37, 2.55)
- Less than 10 hours off between shifts: 1.55 (1.13, 2.11)
- On-call weekly or more: 1.88 (1.16, 3.16)

Trinkoff et al, 2006

Risk factor: work environment

Why might work stress lead to nurses' injuries?

Over time, and with repeated exposure, abuse can increase risk of chronic muscle and skeletal injury

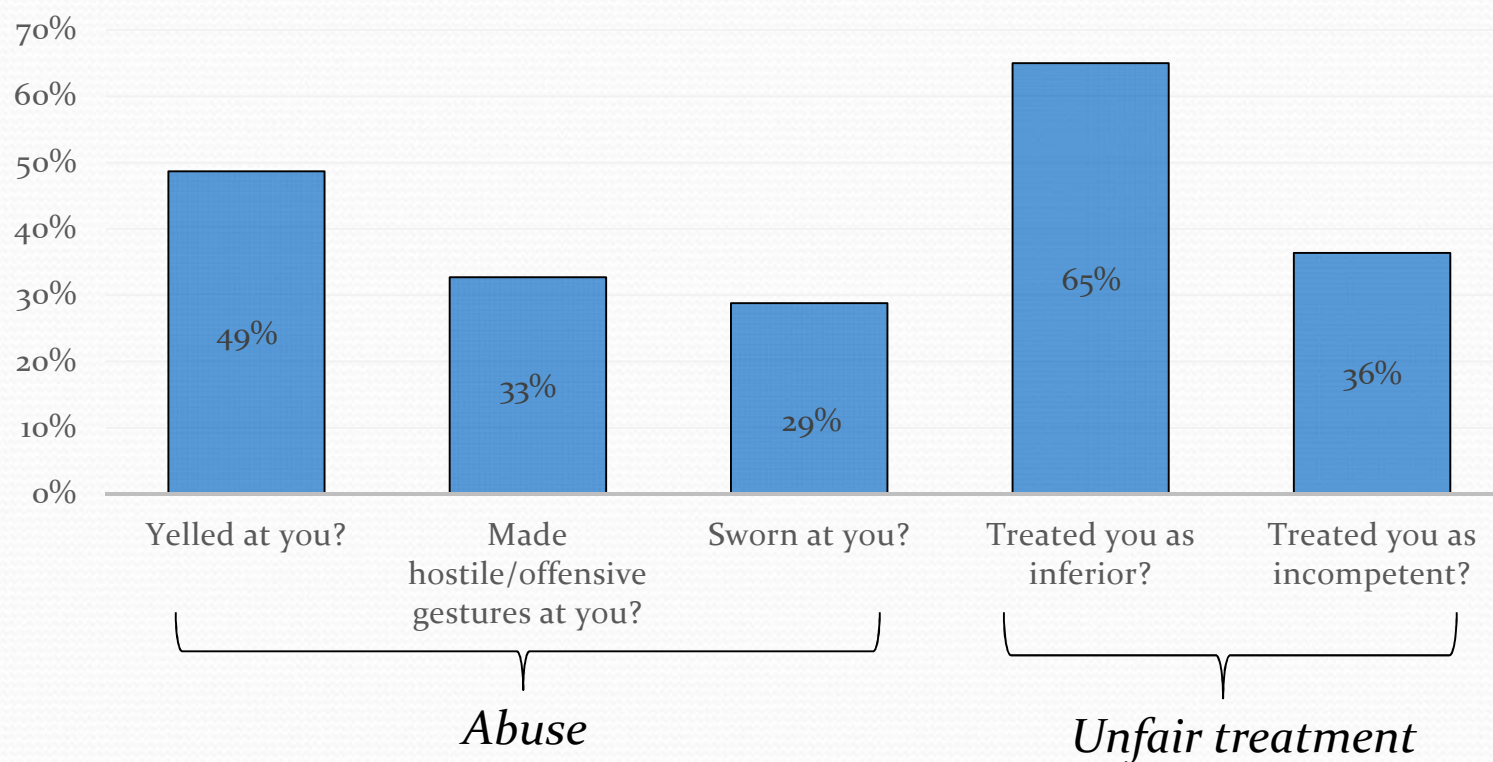


Anger and fear increase distraction

Muscle tension increases risk of strains

Dulled pain perception can lead to unintentional over-exertion

“During the past year, has anyone...”



Sabbath et al, Am J Ind Med, 2014

Abuse as a risk factor for injury

Exposure		Prevalence ratio for injury (95% CI)
Abuse	Yelled or screamed at	1.54 (1.20,1.97)
	Hostile/offensive gestures	1.46 (1.14,1.86)
	Sworn at	1.39 (1.08,1.78)
Unfair treatment	Treated as inferior	1.01 (0.82,1.37)
	Treated as incompetent	0.93 (0.72, 1.21)
	Number of abuse exposures	
	0	1.00 (reference)
	1	0.95 (0.66, 1.35)
	2	1.46 (1.04, 2.04)
	3	1.72 (1.27, 2.34)

P-value for linear trend: <0.001

Adjusted for age, race, sex, job type, weekly hours worked; units specified as random intercepts

Sabbath et al, Am J Ind Med, 2014



Takeaway points

- Nurses and aides are at high risk for occupational injury
- Numerous structural and psychosocial factors in the workplace are risk factors
- Interventions to address those risk factors may reduce injury risk



Thank you and questions