

## BACKGROUND

- Nurses are at high risk of musculoskeletal (MS) disorders
  - 56-70% prevalence of work-related MS symptoms
  - ~12,000 lost-work-time MSD cases/year in the US
  - High risk perception - 83% felt they were more likely than not to have a MS injury within a year (Lee et al. 2013)
- Patient handling is the primary risk factor for MSDs
- Organizational and individual-level safety practices are important to prevent MS injuries among workers

## OBJECTIVES

- To examine the associations of organizational safety practices with physical and psychosocial job factors, risk perception, safety behaviors, and work-related MS symptoms among hospital nurses

## METHODS

- Cross-sectional survey**
  - Postal (primary) and web survey in Jan-July 2013
- Sample**
  - Random sampling from the California Board of Registered Nurses (RN) list (n=2,000)
  - 526 RNs responded (26.3%)
  - 268 eligible RNs working in hospitals (67.7%)
- Variables and Measures**
  - Organizational safety practices (Amick III et al. 2000)
    - safety climate, people-oriented culture, ergonomic practices
  - Physical workload index (Hallmann et al. 1999)
  - Job strain, job satisfaction, intention to leave job (Job Content Questionnaire)
  - Risk perception of MS injury (Lee et al. 2013)
  - Safe patient handling behavior (Lee et al. 2010)
  - Work-related\* musculoskeletal symptoms in the lower back, neck, shoulder, hand or wrist in the past 12 months (\*caused or worsened by work)
  - Demographic and job characteristics

## RESULTS

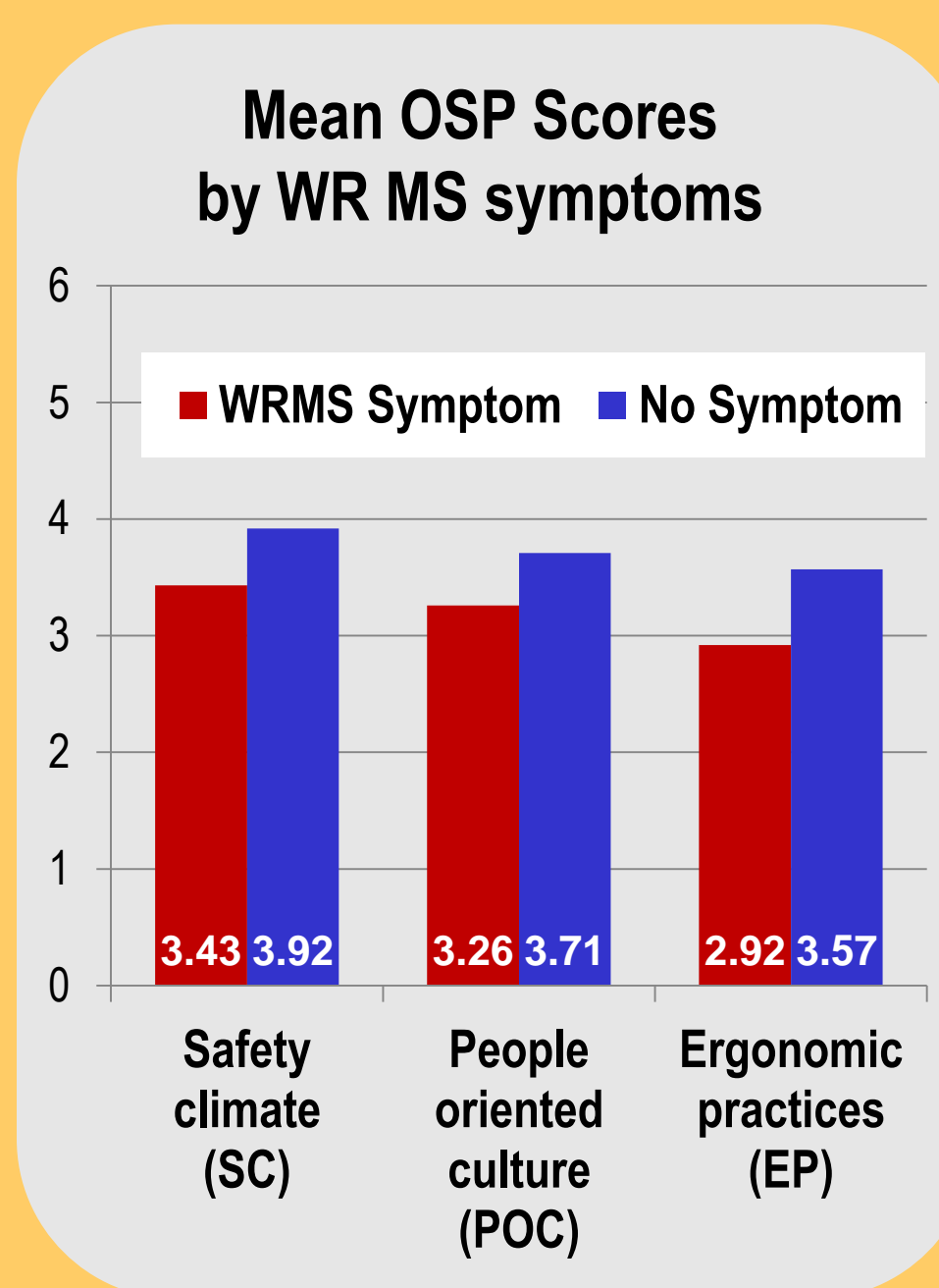
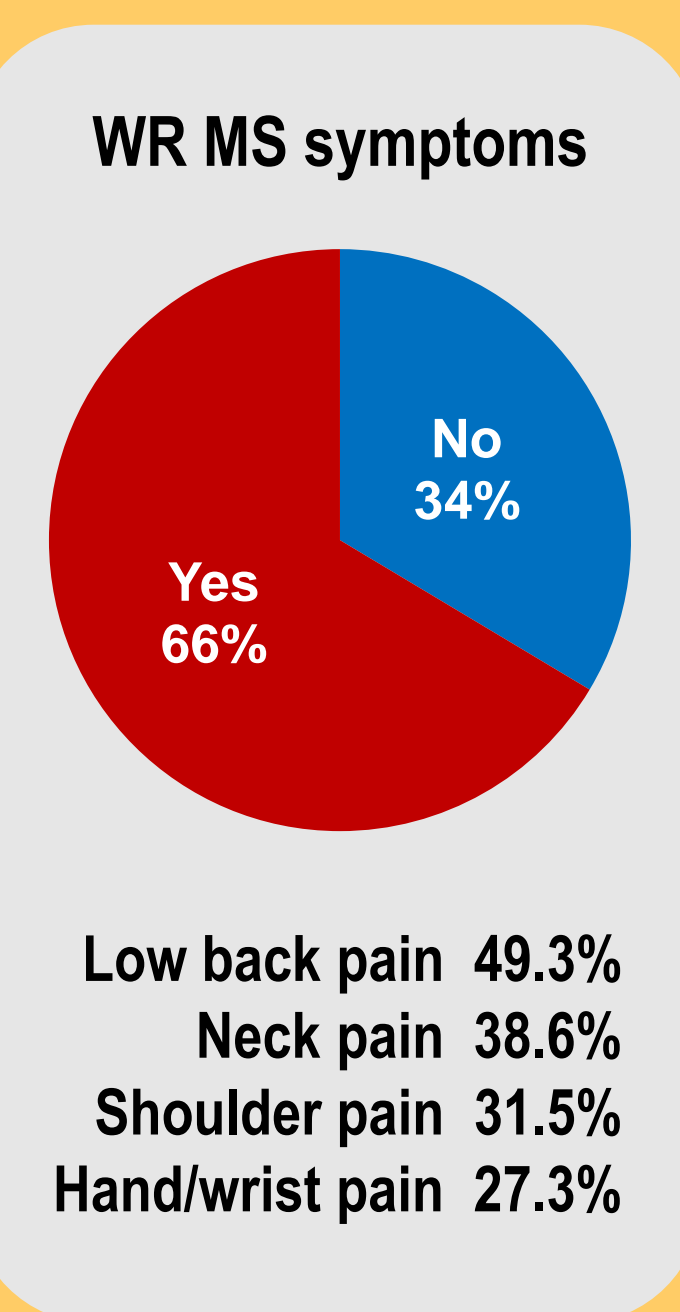
### Sample Characteristics

Variable	%	Variable	%
<b>Type of Hospital</b>		<b>Type of unit</b>	
Teaching Hospital	47	Med/Surge	24
Non-teaching Hospital	45	Intensive care	12
Other	8	Pediatric	11
<b>Work setting</b>		Emergency	10
Urban	53	Operation room	9
Suburban	32	<b>Sex: Female</b>	88
Rural	12	<b>Race/Ethnicity</b>	
<b>Job title</b>		White, Non-Hispanic	58
Staff nurse	65	Asian	25
Charge nurse/Manager	19	Hispanic	8
Other	16	Other	9
<b>Job status: Full-time</b>	74	<b>Foreign educated</b>	20
<b>Work schedule: Day</b>	62	<b>Age (mean, years)</b>	46
<b>Patient handling: Yes</b>	82	<b>Years in nursing (mean)</b>	18

### Organizational Safety Practices and Work Environment, Worker Perceptions, and Behaviors

Variables (dichotomized at medians)		Physical workload (Range 0-56.17)	Job strain (Range 0.125-2.0)	Risk perception (Range 1-6)	Safe work behavior (Range 1-6)	Job satisfaction (Very satisfied)	Intention to leave job (Yes)
		Mean	Mean	Mean	Mean	%	%
Safety climate	High	35.2	0.45	3.40	5.22	30.7	11.8
	Low	41.0	0.58	3.95	4.59	12.9	19.8
	<i>p</i>	.0005	<.0001	<.0001	<.0001	<.0001	.0005
People-oriented culture	High	37.3	0.46	3.42	5.15	30.4	9.2
	Low	38.6	0.56	3.88	4.70	13.3	22.5
	<i>p</i>	NS	<.0001	.0014	<.0001	<.0001	.0005
Ergonomic practices	High	33.9	0.45	3.24	5.15	30.0	10.7
	Low	41.8	0.56	4.02	4.72	13.7	21.1
	<i>p</i>	<.0001	<.0001	<.0001	<.0001	<.0001	.0005

### Organizational Safety Practices (OSP) and Work-Related Musculoskeletal Symptoms



**Associations between OSP And WR MS symptoms**

Variable	OR*	95% CI
SC	Low	2.78 (1.54-5.02)
	High	Ref
POC	Low	2.57 (1.47-4.49)
	High	Ref
EP	Low	2.58 (1.45-4.58)
	High	Ref

\* Adjusted for age, sex, race/ethnicity (NH white vs. other), job title (staff vs. other), full-time status, shift (day vs. other), and patient handling (yes vs. no)

## CONCLUSIONS

- Higher organizational safety practices were significantly associated with
  - lower physical workload and job strain
  - lower risk perception
  - safer patient handling behaviors
  - higher job satisfaction, lower intention to leave job
  - lower work-related symptom reporting
- The study findings suggest that organizational safety practices may play a pivotal role in promoting nurses' safety behaviors and positive perceptions about job, and in reducing the risk of work-related MSDs.

## Acknowledgements

- Funding supported by the Southern California NIOSH ERC Pilot Research Grant (2T42OH008412-08)
- Contact:** soo-jeong.lee@nursing.ucsf.edu