

# **Work-related Injury and Illness among Hotel Housekeepers**

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## **Four Questions**

- ① Are housekeepers at increased risk for work-related injury?
- ② Are housekeepers exposed to known occupational risk factors for injuries?
- ③ Is there an association between risk factors and the rate of injuries in housekeepers?
- ④ Can injuries be prevented?

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## Four Data Sources

- ① Employer surveys conducted by the Bureau of Labor Statistics (BLS 2003-2010)
- ② Study of employer OSHA-300 injury logs and employment records (Buchanan 2011)
- ③ Surveys of San Francisco and Las Vegas Hotel Room Cleaners (Krause 1999-2010)
- ④ Literature on work-related injury (e.g. review of MSD by NIOSH, Bernhard 1997)

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## High Injury Risk ?

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## The Size of the Problem: BLS 2010 Employer Survey

1.7 million work in traveler accommodation  
- nearly all in hotels or motels

- 25% maids & housekeepers (410,800)

66,000 non-fatal work injuries

4,726 occupational illnesses

20,940 with days away from work (lost-time)

23 fatal injuries

(Source: BLS 2010)

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## Leading in Lost-Time Injury: Housekeepers Among the Top 10 of 800 Occupations in Private Industry

- Maids and housekeeping cleaners rank among the first 10 of nearly 800 occupations tracked by BLS in terms of injuries and illness that involve days away from work, restricted work, or job transfer (BLS 2008, Brown 2011)

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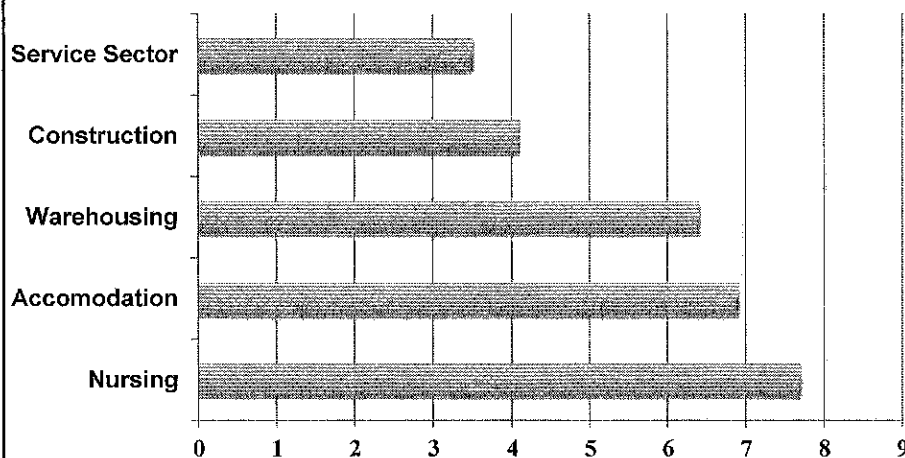
## Leading in Lost-Time Injury: Second in the US Service Sector

- 87.7 million employed in service sector
- Considering both lost-time injury rates and counts, traveler accommodation ranks second after janitorial services and followed by waste collection, among the 50 service sector private industry groups with published BLS lost-time injury data

Source: BLS 2008 and Utterback, JOEM, 2012

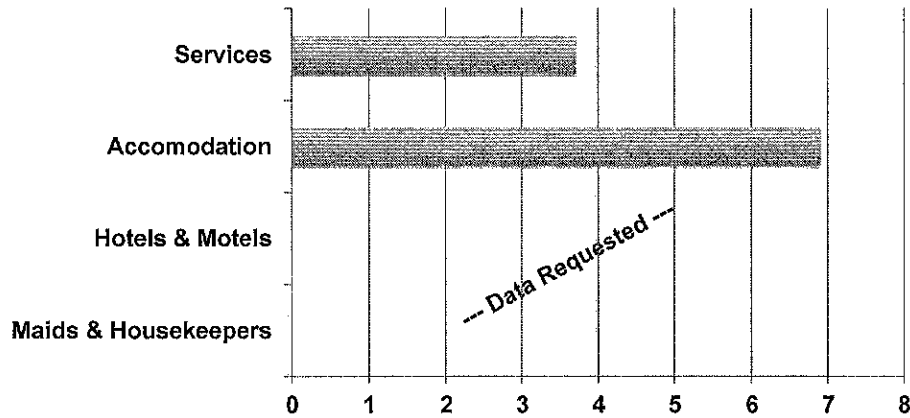
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## Leading Second in CA Service Sector Injuries per 100 Workers (BLS 2010)



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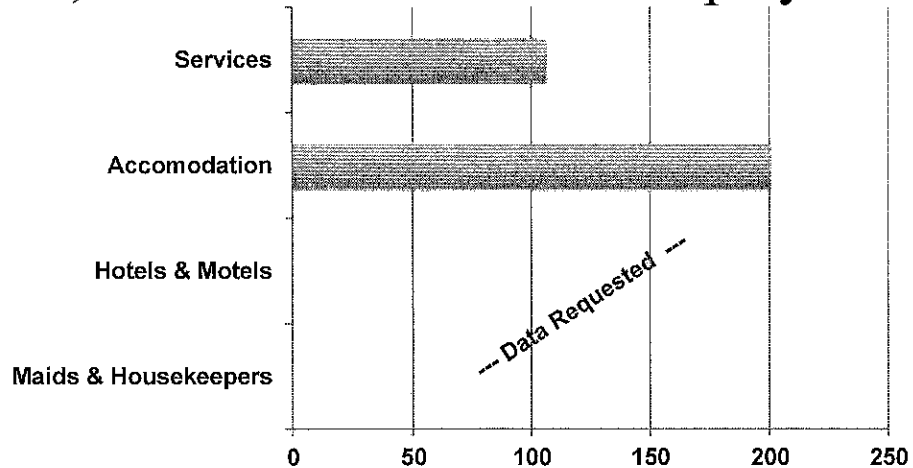
## Injuries per Year per 100 CA Private Sector Employees



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Source: BLS 2010

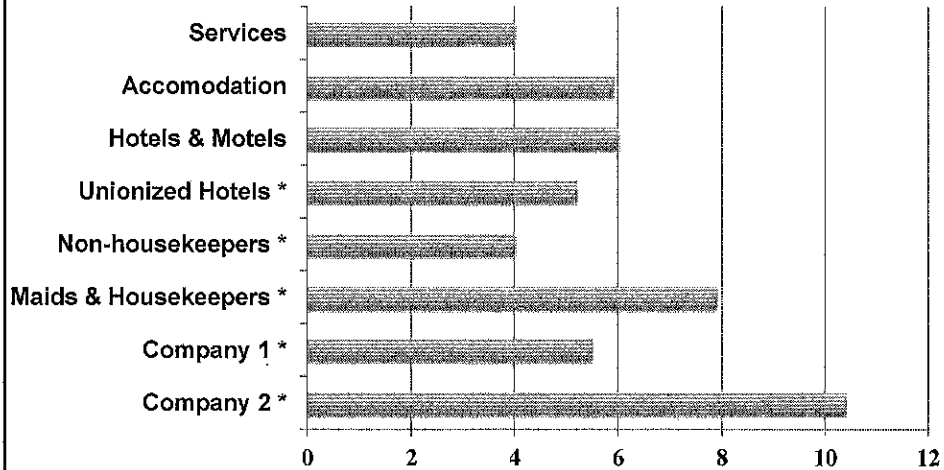
## Injuries and Illnesses with DAFW per 10,000 CA Private Sector Employees



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SOURCE: BLS 2010

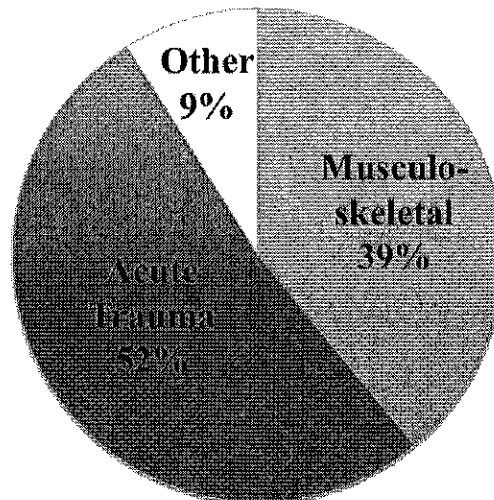
## Injuries per 100 US Private Sector Employees in 2003-2005



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Source: BLS 2003-2005, \* Buchanan et al. 2011

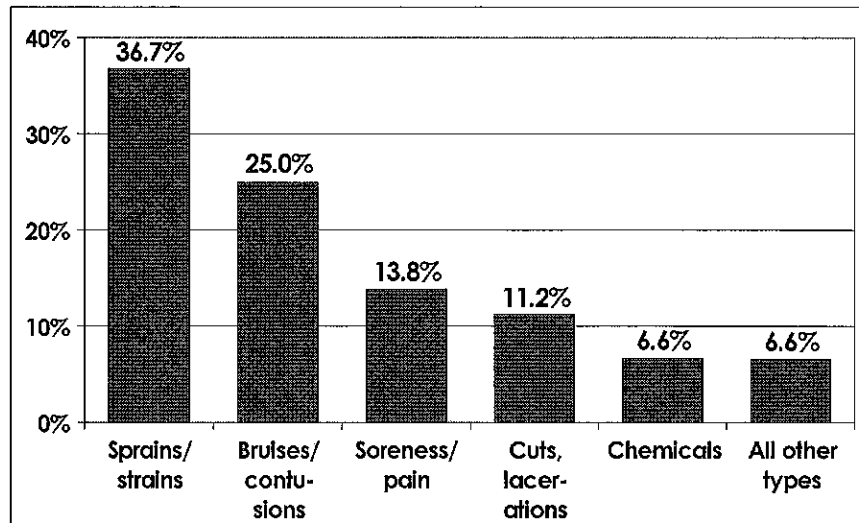
## Main Types of Injury Female Hotel Housekeepers



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Source: Buchanan 2011

## Detailed Nature of Injuries Female Hotel Housekeepers



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Source: Buchanan 2011

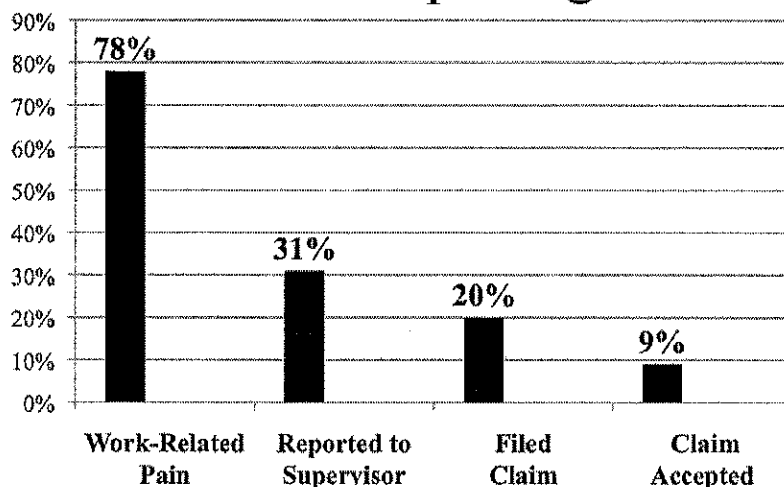
## The Size of the Problem Based on Employee Surveys

- 47% had severe or very severe bodily pain in the last month
- 84 % took pain medication during the last month for pain they had at work
- 78 % experienced pain in the last year **caused or made worse by work** as a hotel room cleaner

Source: Krause AJIM 2005

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## Work-related Pain and Injury Underreporting



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Source: Scherzer 2005

## Barriers to Reporting Work-Related Pain to Supervisor

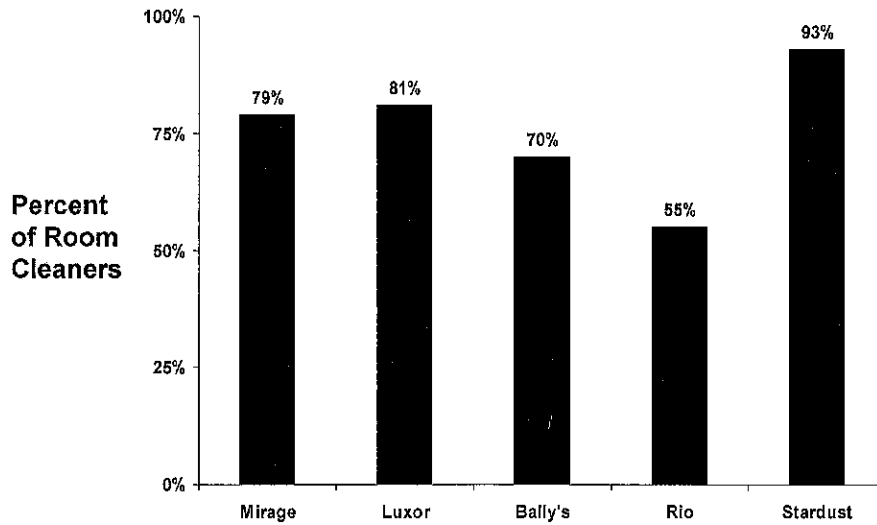
- 44% "It thought it would get better"
- 35% "I did not know I should"
- 23% "Too many steps to reporting"
- 13% "We get in trouble if we get hurt"
- 13% "I was afraid I would get fired"

(Source: Scherzer, AJIM 2005)

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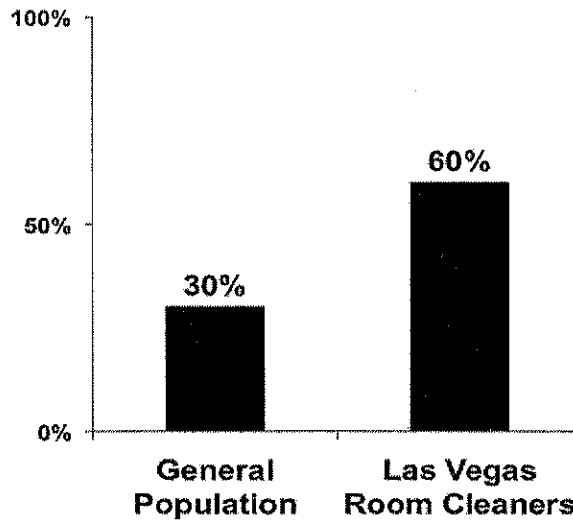


## Participation Rates by Hotel



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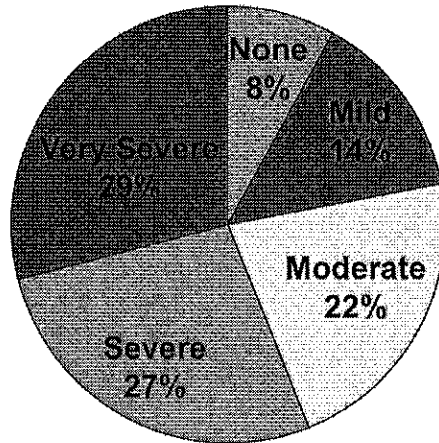
## Back Pain During Past Month



Source: Krause AJIM 2005

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## Shoulder Pain During Past Month among Las Vegas Hotel Room Cleaners



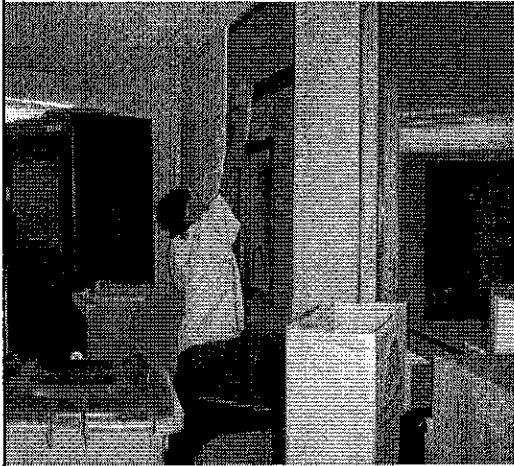
Source: Scherzer AJPH 2005

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## Known Injury Risk Factors for Housekeepers

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## Awkward Postures



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- Lumbar Motion Monitor tool measures trunk movements and their forces on the low back (Marras, 2006)



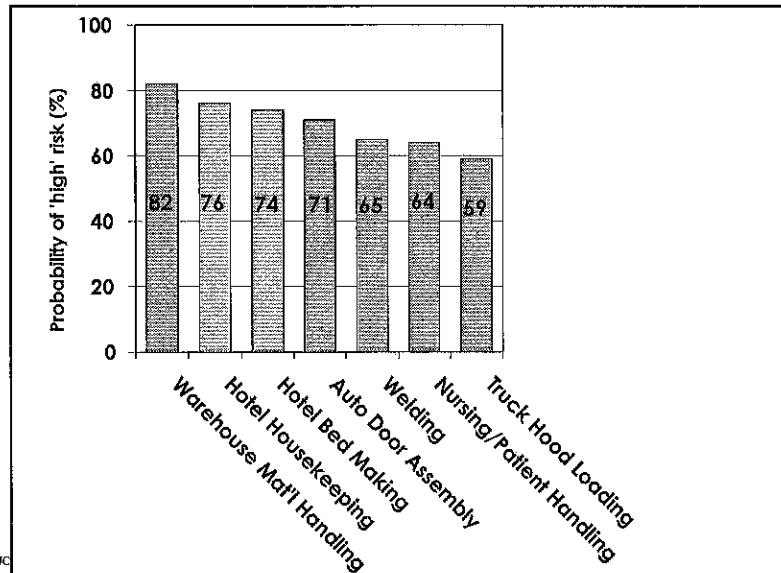
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# Lifting, Bending, and Twisting



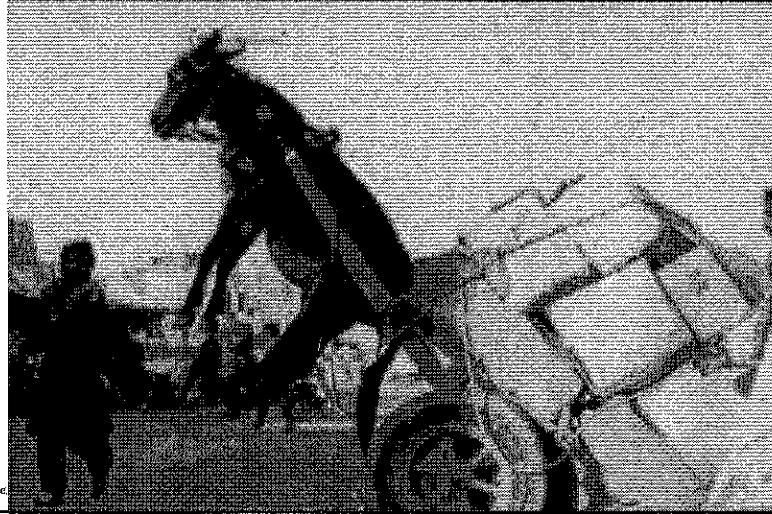
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## Probability of 'High' Risk of Low Back Injuries: Housekeeping ranks second among other high jobs



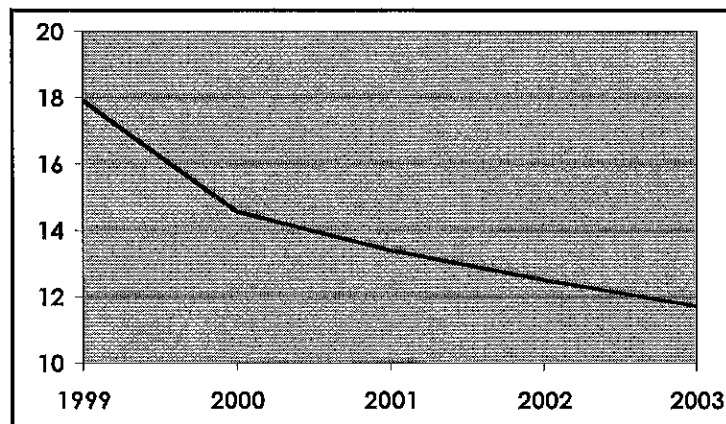
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# Too much stuff?



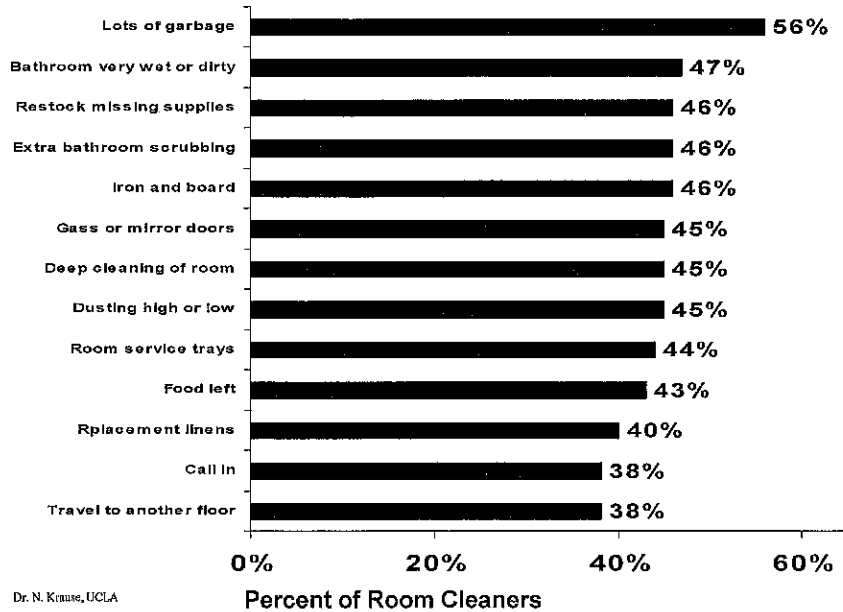
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## Housemen per 100 Housekeepers, 1999 to 2003

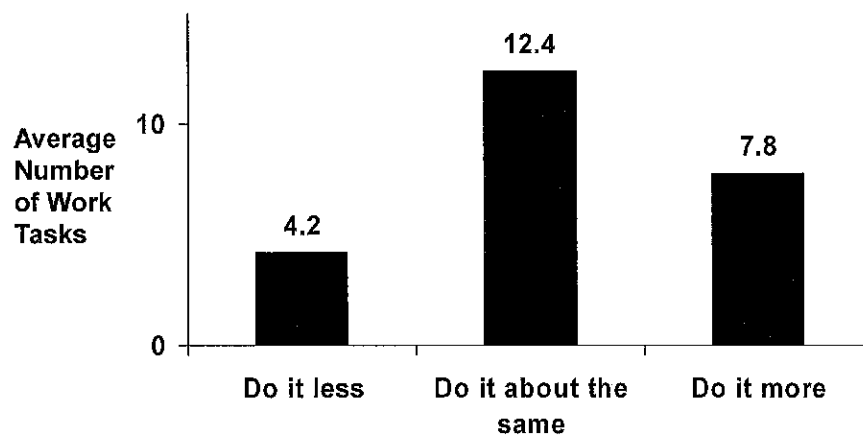


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## “Do it more” Compared to Previous Five Years

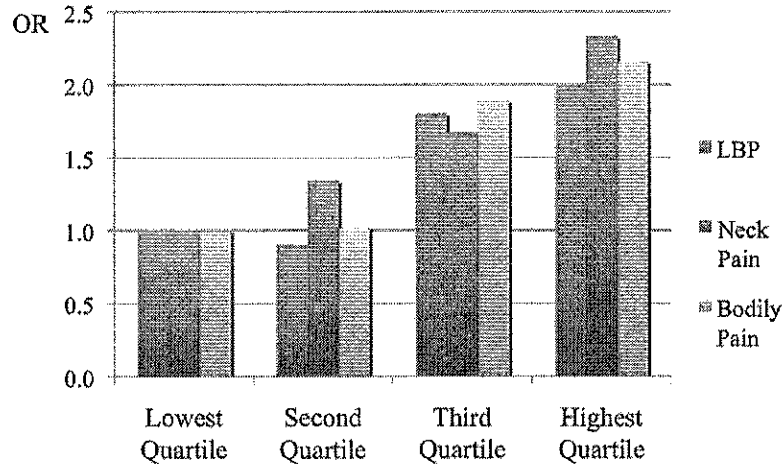


## Changes in Frequency of Work Tasks over Last Five Years



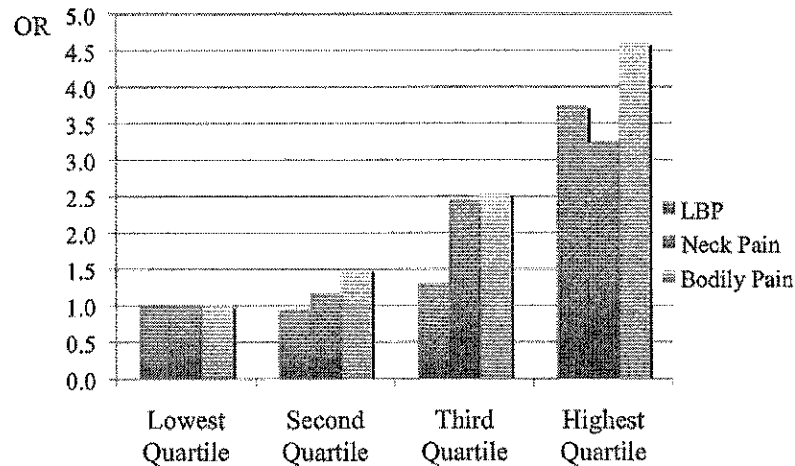
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## Work Intensification Associated with Severe Pain (Adjusted OR\*)



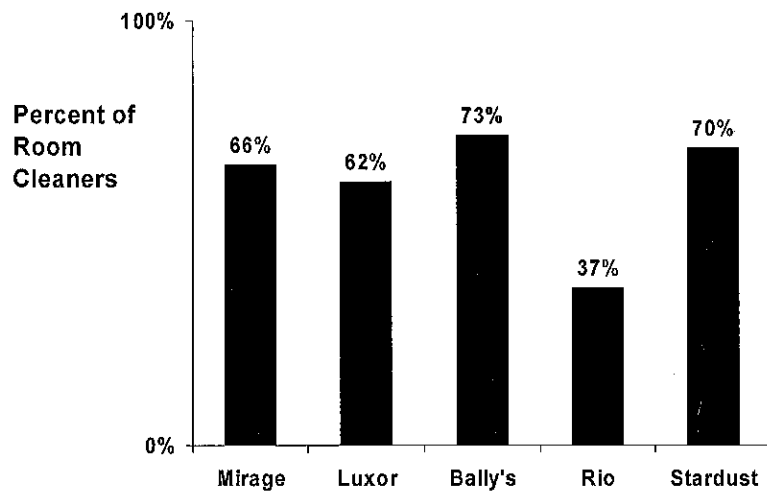
\* Odds ratio adjusted for age, height, weight, smoking, alcohol, years of hotel work, weekly work hours, family members with special needs, psychological stress at work, coworker support, and supervisor support (Krause A, JIM 2005)

## Physical Workload Associated with Severe Pain (Adjusted OR\*)



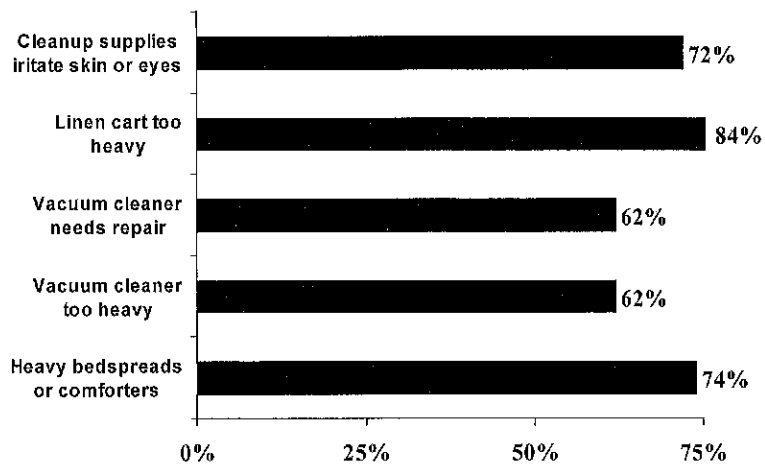
\* Odds ratio adjusted for age, height, weight, smoking, alcohol, years of hotel work, weekly work hours, family members with special needs, psychological stress at work, coworker support, and supervisor support (Krause A, JIM 2005)

## Vacuum Cleaner Needs Repairs



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## The Five Most Frequent Ergonomic Problems\*



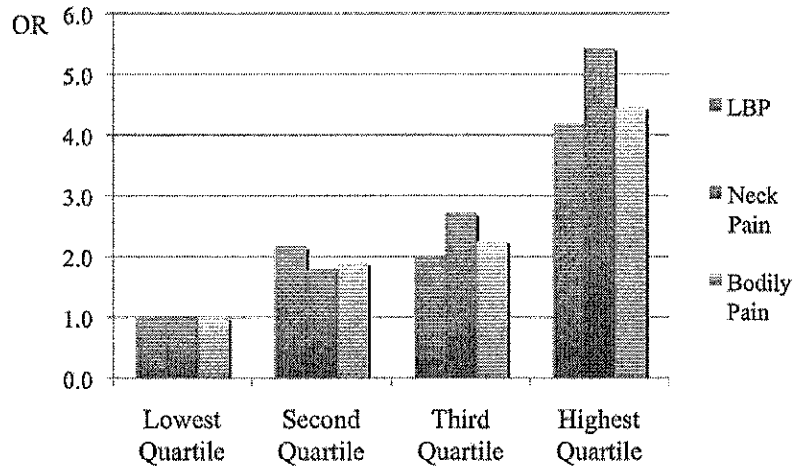
\*Percentage of room cleaners reporting "somewhat of a problem" or "a big problem."

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Source: Krause AJIM 2005

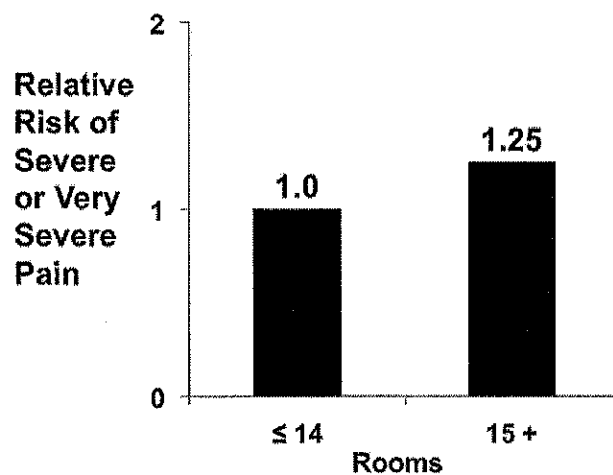


## Ergonomic Problems Associated with Severe Pain (Adjusted OR\*)



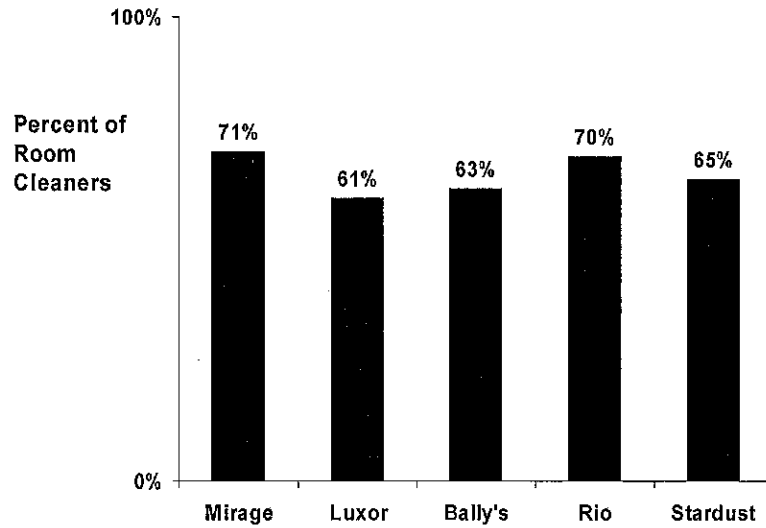
\* Odds ratio adjusted for age, height, weight, smoking, alcohol, years of hotel work, weekly work hours, family members with special needs, psychological stress at work, coworker support, and supervisor support (Krause AJIM 2005)

## Number of Rooms Associated with Severe Pain (Age Adjusted)



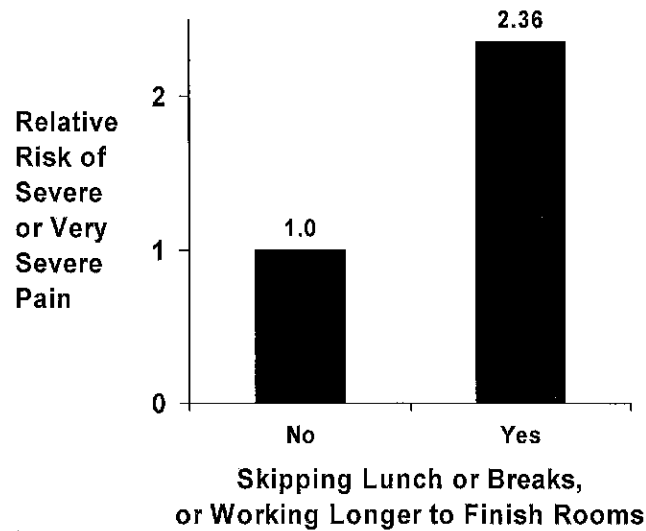
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## Skip Lunch or Breaks, or Work Longer Hours to Finish Rooms



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## Skipping Lunch or Breaks and Severe Pain (Age Adjusted)



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## Conclusions

- ① Maids and housekeepers have one of the highest injury rates in the hotel industry and in the entire private service sector
- ② Housekeepers are exposed to known risk factors for musculoskeletal pain and injury such as awkward postures of trunk and extremities, forceful movements, heavy pushing and pulling, heavy lifting, and frequent trunk bending und twisting.

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- ③ Reported differences in risk factors and injury rates between hotels indicate a high potential for the prevention of injuries
- ④ Reduction of workloads and time pressure through the provision of extra personnel, tools and equipment that reduce awkward postures and the frequency or force of high risk job tasks can be expected to lead to a reduction of work-related injury among hotel maids and housekeepers.

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## Published articles involving hotel worker health:

1. Lee, P.T. and N. Krause, *The impact of a worker health study on working conditions*. **J Public Health Policy**, 2002. 23(3):268-85
2. Scherzer, T., R. Rugulies, and N. Krause, *Work-related pain, injury, and barriers to workers' compensation among Las Vegas hotel room cleaners*. **Am J Pub Health** 2005;95(3):478-488
3. Krause, N., T. Scherzer, and R. Rugulies, *Physical Workload, Work Intensification, and Prevalence of Pain in Low Wage Workers*. **Am J Ind Med** 2005. 48:326-337.
4. Rugulies R, Scherzer, T, Krause N, *Associations between Psychological Demands, Decision Latitude and Job Strain with Smoking in Female Hotel Room Cleaners in Las Vegas*, **Int J Behav Med** 2008;15(1):34-43
5. Krause N, Rugulies R, Maslach C, *Effort-reward imbalance at work and self-rated health of Las Vegas hotel room cleaners*. **Am J Ind Med** 2010; 53(4):372-86
6. Buchanan S, Vossenas P, Krause N, Moriarty J, Frumin E, Shimek JAM, Mirer F, Orris P, Punnett L, *Occupational health disparities in the U.S. hotel industry*, **Am J Ind Med** 2010;53:116-25
7. Burgel BJ, White MC, Gillen M, Krause N, *Psychosocial work factors and shoulder pain in hotel room cleaners*, **Am J Ind Med** 2010;53(7):743-56
8. Premji S, Krause N, *Disparities by ethnicity, language and immigrant status in occupational health experiences among Las Vegas hotel room cleaners*, **Am J Ind Med** 2010;53(10):960-75