Introduction

- We conducted a case-crossover study to evaluate potential transient risk factors for a slip, trip or fall (STF) event among US health care workers.
- A case-crossover design was used to control for differences between individuals such as age, gender, occupation, risk-taking behavior, and BMI.

Case Selection and Exposures

- Workers reporting a STF event (injured or not) to one of seven occupational health departments over a three-year period were interviewed via telephone.
- Exposure prevalence for factors was ascertained at the time of the STF event (hazard period) and during their past work week or month (control period) for:
  - workplace-related (contamination, unusual pathway)
  - work-task related (pushing/pulling, carrying)
  - worker-related (rushing, distraction)

Methods

Usual Frequency Approach: contrasts exposure in the hazard period with the expected exposure (Lombardi et al., 2004)

Relative Risk Estimator

Incidence Rate Ratio (IRR) = The ratio of unexposed person-time for exposed cases to exposed person-time for unexposed cases. This is the Mantel-Haenszel estimator for incidence rate ratio data.

Results

- 153 workers, 131 women (86%) and 22 men were interviewed with a mean age of 46 years (19-67)
- Other transient factors in decreasing order of short-term relative risk
  - contamination was present, 39.8 (31.5-50.2)
  - walking on an unusual pathway, 86.8 (46.6-161.6)
  - walking on a contaminated floor while rushing, 54.6 (33.7-86.6)

Strengths and Limitations

- Preliminary findings suggest that the short-term relative risk (95% CI) of a STF was highest when:
  - walking on an unusual pathway, 86.8 (46.6-161.6)
  - when contamination was present, 39.8 (31.5-50.2)
  - Other transient factors in decreasing order of short-term relative risk were carrying objects, being distracted, and being rushed.
  - Pushing/pulling reduced the short-term STF relative risk by about 77%, RR=0.23 (0.12-0.45).

Summary and Conclusions

- The results suggest the importance of several transient modifiable risk factors to help prevent STF events at work. Importantly, floors should be kept clean and dry, and hospitals should develop a system that allows employees to rapidly report floor spills so that contaminants can be cleaned-up promptly.
- The case-crossover method is an efficient approach for studying transient risk factors for STF events.