



# Sleep Problems and Workplace Injuries in Canada

## Background

In 2002 more than 3 million Canadian adults had insomnia, the most common sleep problem. Sleep problems can interfere with daily functioning, and increase the potential risk of work-related injury.

## Purpose

The purpose of this study is to investigate the association between sleep problems and the risk of work injury in the Canadian working population and to identify high risk working groups.

## Methods

This study used data from the Canadian Community Health Survey (CCHS) Cycle 1.1 2000-2001 public use file. The population was defined as working age respondents (age 15-64) who worked part time or full time in the last 12 months. A work injury was defined as a self-reported injury in the past 12 months that occurred while working at a job or business, or at a commercial, industrial or construction area or a farm.

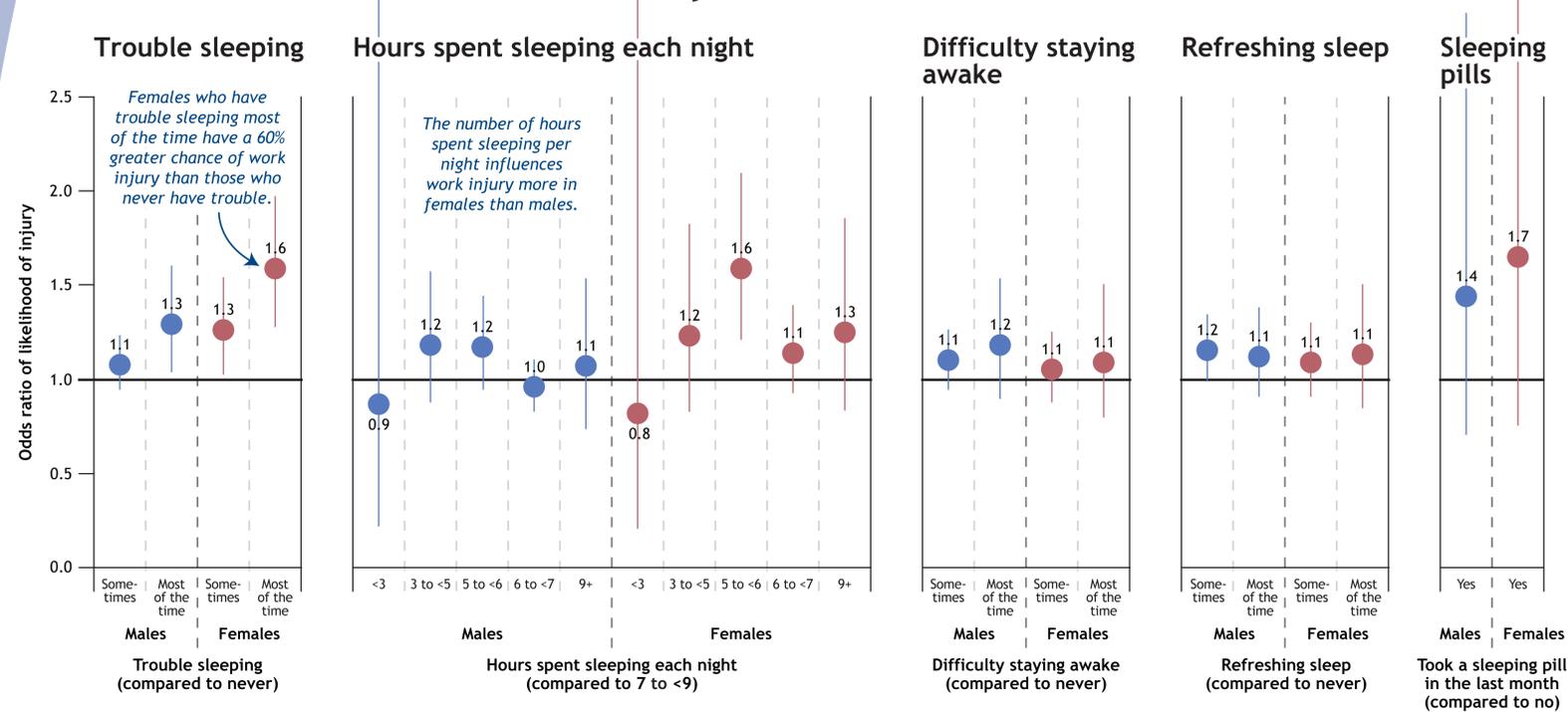
Sleep problems were defined by the following CCHS questions:

- How often you have trouble going to sleep or staying asleep (most of the time)
- Number of hours spent sleeping per night (less than 7-9 hours/night)
- The frequency of trouble sleeping (most of the time)
- The frequency that sleep is refreshing (never)
- How often it is difficult to stay awake (most of the time)
- Sleeping pills taken last month (yes)

Logistic regression models were used to calculate odds ratios (OR) and 95% confidence intervals (CI) of the association of sleep problems and work injury adjusted for covariates. Confidence intervals were adjusted using bootstrapped weights to account for survey sample design. Covariates included demographics, health status measures, work stress, occupation and working hours.

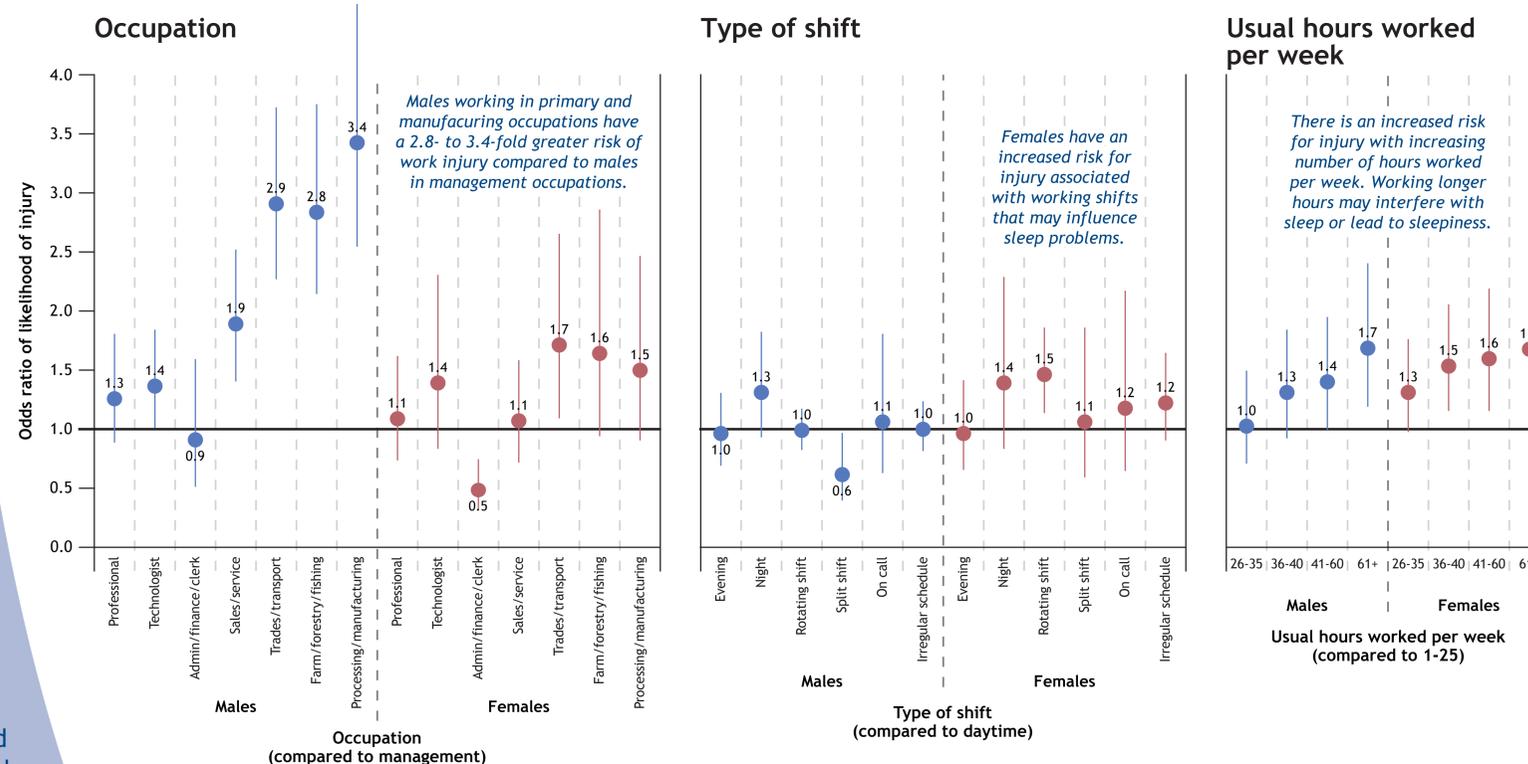
## Risk of work injury associated with sleep problems

Adjusted for covariates



## Risk of work injury associated with occupation and working conditions

Adjusted for trouble sleeping and other covariates



## Results

### Sleep problems

In the final adjusted models, an elevated risk of injury was observed for all sleep problem variables, although these risks were not always significant. Significant elevated risks were observed for trouble sleeping most of the time for both men and women. For women only, sleeping less than 7-9 hours and taking a sleeping pill in the last month were also associated with a work injury.

### Injury and work variables

There was a steeper gradient in work injury risk for males compared to females by occupation. Both genders have a high risk of work injury in occupations that may be affected by sleep problems (e.g., trades and transportation). Working long hours is also associated with work injury risk compared to working 1-25 hours per week. Females also had a similar or higher risk of work injury for all shift types (compared to daytime shift), although this was only significantly different for rotating shifts. For males there were no significant differences by shift type.

### Gender differences

Single women (versus married) were at a significant increased risk for work injury compared to single men. Women with 2 to 3 or more chronic diseases were also at an increased risk for work injury compared to men (compared to those with no chronic diseases).

## Conclusions

This study showed that workers who have trouble sleeping are at increased risk for work injuries. Females have a higher risk for injury associated with sleep problems compared to men, and they also have a higher risk for injury associated with work characteristics that can affect sleep, such as working night and rotating shifts. Future work should examine methods of mitigating risks in these groups.

## Acknowledgements

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