Reviewer's report

Title: Associations between employee and manager gender: impacts on gender-specific risk of acute occupational injury in metal manufacturing

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Reviewer: Joost van der Gulden

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Associations between employee and manager gender: impacts on gender-specific risk of acute occupational injury in metal manufacturing

This is a well-written study on the question whether employee and manager gender might be associated with risk of acute occupational injury. Although not a major topic in OH&S, this is a relevant question because female workers appear to have an increased risk of injury and the numbers of female managers increase both in profit and non-profit sectors.

General questions
When assessing the work, please consider the following points:

1. Is the question posed by the authors well defined?
   Yes

2. Are the methods appropriate and well described?
   See my remarks below

3. Are the data sound?
   See my remarks below

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   Yes, but see my remarks made below

6. Are limitations of the work clearly stated?
   See my remarks below

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
   Yes
8. Do the title and abstract accurately convey what has been found?
yes

9. Is the writing acceptable?
yes

Major issues
First, I have to note that I’m an expert in occupational medicine and not in the advanced statistics used in this study. I understand the data presented in the text and the Tables. The conclusions drawn seem to be correct and plausible. But I can’t assess if the Cox proportional hazard models used are well chosen and properly applied.

This study is based on data from a comprehensive real-time incident management system that requires recording of all first-aid and reportable injury. The data recorded in this system show a small but statistically significant difference between injury risk of male and female workers. However, it is unclear whether male and female workers visit the first-aid after small accidents in the same way. If women seek help in case of minor injuries while men don’t, the registration shows a difference in accidents that actually does not exist.

In most industries all over the world there is an underreporting of minor accidents that are settled without medical assistance. Is there any information on the completeness of reporting of injuries in this company?

The authors conclude that their study have important limitations (page 14), but they don’t discuss these serious problems.

My advice is to split Table 2 (description of first acute injuries in the cohort) by gender to see if there are meaningful differences in the severity and nature of the accidents presented by women and men. It is necessary to discuss the problem I mentioned above in the Discussion, and it important to determine whether the differences found in previous studies might be based on registration failures. We have to exclude that there is ‘much ado about nothing’.

A second issue to which insufficient attention is given, is whether the inability to demonstrate serious differences between men and women might be explained by a lack of statistical power. The numbers of workers and managers seem to be large enough to detect potential differences. Nevertheless, the authors have to discuss this topic.

Abstract
The abstract is sufficient.

Background
The text of the Background is clear. The authors note that women experience a higher rate of injuries for comparable job titles in many industries. Please, present some figures to illustrate how large (or small) the differences found in
previous research are.

Methods
It is important to explain how first-aid and injury reporting is organized in the industries under study. There work over 5000 workers so it concerns large companies and plants. Therefore, the distance between the workplace and the first-aid room can be long. Suppose that women on average work closer to first-aid facilities than men, this might have contributed to an underreporting of minor accidents among male workers. Suppose that the first-aid room is situated close to the high-risk departments (with more male workers, see page 13) other reporting failures might be possible.

Results
The presentation of main results is well-structured and clear.
See my previous remark about Table 2.
The small number of Asian workers appear to have a significantly lower risk than white workers (Tables 3 and 4). Is there any explanation for this finding (e.g. other job titles) or is it based on chance? Has this difference been found in previous studies?

Discussion
The Discussion is well-structured and clear, but see my previous remarks.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests in relation to this paper or to any of the authors.