Reviewer's report

Title: Registry-based data of psychosocial working conditions and occupational groups as predictors of disability pension due to musculoskeletal diagnoses: a prospective cohort study of 24 544 Swedish twins

Version: 1 Date: 25 March 2013

Reviewer: Birgit Greiner

Reviewer's report:

The aim of this 12-year follow-up prospective study with a large sample of twins aims to study the effects of psychosocial working conditions on disability due to MSDs while adjusting for familial effects. The study makes good use of the large cohort of monozygotic and di-zygotic twins. It is a very unique study well suited to disentangle genetic predispositions, share family environments and environmental occupational factors.

Major compulsory revisions:

1. The manuscript could benefit from clearer hypotheses. Some expectations are formulated in the methods section and could be re-stated as hypotheses.
2. The interpretation of results would be greatly enhanced if the authors provided within pair (twin) correlations for the outcomes, separate for mono-zygotic and di-zygotic twins.
3. In my view, table 1 would be more meaningful if the authors used the row percent rather than the column percent. I would be more interested in learning the percentage of men who received DP due to MSD as compared to women, rather than the percentage of those with DP MSD who were male.
4. Some of the results are not described and interpreted in a detailed fashion. For example, the authors found a significantly decreased risk for of DP MSD for high strain jobs in the entire cohort, however significantly increased risk for the monozygotic twins, and no effect in the di-zygotic twins. This result, which is counter-intuitive requires more discussion.

Minor essential revisions

5. Figure 1 is difficult to read as the y-axis is not labelled. While I understand what the authors are trying to show here, it is not easy to link this figure to the proportional hazard regression analyses. Is figure 2 using a log scale?
6. Was the generation of the iso-strain variable also based on a 2 by two table or on a 3 by 3 table?
7. A consistent use of the past tense especially in the results section is recommended.
8. A suggest expanding the discussion on the limitations of the study. The use of aggregate data for the exposure assessment (Job Exposure Matrix) neglects
within occupation variation, such as job strain variations due to different work organisation within the same job. This variation may be the important one for the development of job design strategies.

Discretionary revisions

9. In the interpretation of results, the authors may capitalise more on the fact that they can tease out the effects of 3 components: genetics, shared familial environment and working conditions environment while interpreting the appropriate comparisons between the cohort, the mono-zygotic and the di-zigotic twins. Some of the results show some level of confounding by familial environment and possibly genetics

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.