Reviewer's report

**Title:** Cross-sectional associations between occupational factors and musculoskeletal pain in female teachers, nurses and sonographers

**Version:** 2  **Date:** 14 September 2015

**Reviewer:** Eileen McNeely

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Overall summary: This research offers another perspective to the relative contribution of psychosocial and physical stressors to various types of musculoskeletal pain.

The main contribution is in the variety of tasks among less physically demanding mostly female workers and the unique “case definitions” that explain more significant pain.

Although the authors aim to include more than subjective measures, the clinical examinations and technical instrument measures are not used in the models. In addition, the correlations between the mechanical exposures measured and self-reported measures seem rather low.

Therefore, the overall results are not well bolstered by the measurements (except of lifting) and remain subject to tautological arguments that result from common source reporting of both predictors and outcomes, for example, workers who perceive more strenuous physical conditions also report more pain.

The fact that the researchers found differences in the regions of the body affected, and diagnosed conditions (presumably a proxy for the seriousness of pain and care-seeking) is nonetheless interesting. Overall, I would recommend this publication with minor revisions.

Discretionary edits: Because the clinical exam and the instrument data of physical demands was not used in the analysis, I found these explanations distracting and therefore the detail may be better summarized in appendix or with more brevity to make the point that the physical requirements of the job did vary in the selection of these jobs (at least for the sampling period). Also, I found no benefit in the chart of measurements in Figure 2 at the end.

Minor edits. A number of typos are recommended:

1. Abstract - This study aims to explore which factors ARE association
2. Line 169—I am confused by the mention of “8 items” under psychological work environment, followed just after with the note of 8,8, and 9 items for job demands, job control, and support. This appears to be more than “8 items”?
3. Line 276 - pain free individuals ON average

Major edits - The authors don’t mention the percentage of full-time versus part time workers (50%) in the sample. In the analysis, these groups are treated the
same even though the relative exposures between these groups may be as much as double.

A sensitivity analysis of full time workers only would allay the concern that teachers, for example, are more likely to be full time and that bias may be introduced in both the reporting of work exposures and in the chance of adverse outcomes (i.e. the type of neck pain).

The finding that younger workers experienced more neck pain than older workers, follows many other study findings of increased injury in less experienced workers as well as the possibility of “healthy worker effect”, such that older workers are the most healthy workers (i.e. survivors).