Reviewer’s report

Title: Long working hours and metabolic syndrome among Japanese men: a cross-sectional study

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Reviewer: Marianna Virtanen

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Review of the manuscript titled: Long working hours and metabolic syndrome among Japanese men: a cross-sectional study

The authors examined cross-sectional association between long working hours and metabolic syndrome and found that working >10 hours a day was associated with metabolic syndrome in male employees. The research question is important, suits well within the BMC Public Health and adds to existing evidence. However, I have some issues to be considered.

Major Compulsory Revisions

1. There is another study on working hours and metabolic syndrome: Violanti et al. Arch Env Occup Health 2009. However, in that study, metabolic syndrome was examined in a combination of shift working policeman and the study population was small.


3. Methods: Please provide some information on the distribution of working hours. How many employees worked part-time? Because part-time work is associated with serious health problems such as CHD it is preferable to either exclude them or treat them as a separate group (see e.g., Sokejima & Kagamimori, 1998).

4. Do you have any information about the participants’ CHD status? CHD can be a confounder which should be either adjusted or the cases excluded.

5. Do you have information on physical activity? If possible, that could be included as a covariate.

6. Table 2: It seems that your association emerges in Model 3. Is it due to the adjustment for socioeconomic status or some of the other covariates? This additional analysis could be reported in the text.

7. Employees who work long hours seem to have better health habits than those working shorter hours. You should report statistical tests for Table 1 (which associations were significant?). The only exception is sleeping hours, thus, can you show what happens to the association shown in Table 2 before and after
adjustment for sleeping hours to see whether short sleep contributes to the association? If the association is remarkably attenuated, then sleeping hours can be a mechanism explaining the association.

8. Discussion: metabolic syndrome is close to type 2 diabetes. There are so far at least three studies on long hours and type 2 diabetes with contradicting results (Kawakami et al., JECH1999, Nakanishi et al. OEM 2001, Kroenke et al AJE 2007). You could reflect your findings in relation to these.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I have no competing interests.