Reviewer’s report

**Title:** Socioeconomic position and work, travel, and recreation-related physical activity in Japanese adults: a cross-sectional study

**Version:** 2  **Date:** 30 March 2015

**Reviewer:** Heini Wennman

**Reviewer’s report:**

- **Major Compulsory Revisions**

  1. Measurements, data analysis: Adding a sentence that describes the GPAQ and that it measures also vigorous activity is not really answering my previous question whether or not the vigorous activity recommendation also was accounted for in the classification of total physical activity or not. Let’s for example think of a person who commutes vigorously 5 times 15 minutes every week but otherwise he does not have sufficiently of moderate or vigorous physical activity to reach the 150 minutes/week. Is this person still included in the active group as he should according to WHO recommendations, even if he does not meet the required 150 minutes/week of moderate or moderate and vigorous activity threshold?

  2. Discussion: It would be advisable to write out the results as they were found. See for example line 145. The associations were examined comparing higher SEP to lower and therefore it is confusing when the discussion and conclusions are written like lower SEP would have been compared to higher.

  3. Conclusions. The results are not altogether consistent between men and women, for example there were no significant associations with SEP and work-related physical activity in women and income was not associated with travel-related physical activity in women. Neither was education related with either recreation or total physical activity in women nor men. Therefore the discussion, but at the least the conclusion of the results would be expected to reflect these different findings, somewhat more strongly than just by saying “the link was more pronounced in men than women”.

- **Minor Essential Revisions**

  1. Measurements, data analysis: The classification of persons into active and inactive is still not altogether clear. The authors responded as follows: “The proportion of inactivity (0min) is therefore over 50%.” Does this imply in fact, that inactivity is equal to 0 minutes/week? I understand that with a variable that is not truly continuous, the proportion in one class can be higher than 50% even if the median has been used. But I would suggest the authors to spell out the median according to which the grouping has been done, for example as follows: “For the analysis, each DPA was categorized by the median (travel= xx min/week, work= xx min/week, recreation= xx min/week) into active and inactive groups.”
2. Abstract, keywords: the term physical activities has not been changed, please change to physical activity

3. Measurements, line 62. The reference for the first sentence “GPAQ is validated and widely used…” is missing in the text

4. Measurements, line 73. Body height for calculating BMI is in square meters m², not cubic meters m³, please correct.

5. Data analysis, lines 86-87: Has a linear model been done or not? Please correct the description of the data analysis to what has really been done.

6. Data analysis: if the relationship between employment status and physical activity has been studied, please mention also this in the data analysis section of the text together with the other SEP indicators examined.

7. Results, line 137: the OR 0.75 refers to a lower, not higher odds as written out. Please correct the sentence.

8. Discussion, lines 157-159: the sentence include double referencing that is not necessary. Please remove the other.

9. Discussion, line 187: the reference nr 31 is wrong, please correct to be reference nr 30.

Level of interest: An article of limited interest

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.