Author's response to reviews

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

Authors:

Munehiro Matsushita (m.munehiro1987@akane.waseda.jp)
Kazuhiro Harada (haradak@ncgg.go.jp)
Takashi Aroo (tarao@waseda.jp)

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Author's response to reviews: see over
Responses to the comments of Reviewer #1

<Minor Essential Revisions:>

1 Comment 1
Table 1 and 2: For P values, the “0.000” is not appropriate. Valid expression is “<0.001”.

Response:
Thank you for your comment. In Table1 & Table2, we change <0.001 from 0.000.

- Background
1 Comment 2:
Table 2: For P values, report to three decimal places.

Response:
Thank you for your comment. In Table2, we additionaly report three decimal places as P values.
Responses to the comments of Reviewer #3

<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?

Response:
Thank you for your comment. Most of middle-aged people in Japan do not engage in only vigorous physical activity in daily life including working. It is generally recommended that moderate or vigorous physical activity (MVPA) should be better intensity of physical activity for the promotion of health or prevention of diseases. Then, most of the previous researches used only a criteria of MVPA recommendation (150min/week). Therefore, in this study, we used the WHO’s MVPA recommendation and didn’t use vigorous physical activity recommendation. Therefore, the person in your comment was not included in the active category in our study.

<Previous Researches >
1 Doescher et al., Prev Med, 2014; 69; 80-86
1 K. Sun et al., Seminars in Arthritis and Rheumatism, 2014; 44: 264-270

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.

Response:
Thank you for your comment. We corrected the sentences as follows:

(p.9, Lines.147-149)

In work-related physical activity, the men with higher household income or educational
status were less active than men with lower SEP. However, the relationship between SEP and work-related physical activity was not significant.

(p.10, Lines.158-162)
In travel-related physical activity, the men with higher household income or educational status were more active than men with lower SEP. Also, the women with higher educational status were more active than women with lower educational status. However, full time employed women were less travel-related physically active than non full time employed women

(p.10, Lines.172-173)
In recreational-related physical activity, both men and women who showed high household income were more active than lower household income workers.

(p.11, Lines.182-183)
In total physical activity, both men and women who showed high household income were more active than lower household income workers.

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”.

Response:
Thank you for your comment. We re-wrote the conclusion. Please check the following sentence.

(p.12, Lines.201-205)
Although this study has some limitations, our results suggest that both men and women with higher household income are more active in recreational-related and total physical activity than the both sexes with lower income. However, the relationships between SEP and work or travel-related physical activities are different in gender.
<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.”

Response:
Thank you for your comment. WHO recommended that physical activity should be performed in bouts of at least 10 minutes duration. Thus, in case of DPA, we define “active” as “performed in bouts of more than 10 minutes duration with one or more days a week” and “inactive” as “not performed in bouts of more than 10 minutes duration in a week.” We additionally made following sentence.

(p.7, Lines.83-86)

each DPA was categorised into “active” (performed in bouts of more than 10 minutes duration with one or more days a week) or inactive (not performed in bouts of more than 10 minutes duration in a week).

2. Abstract, keywords: the term physical activities has not been changed, please change to physical activity

Response:
Thank you for your comment. In keyword, we changed physical activities to physical activity.

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

Response:
Thank you for your comment. We eraced this sentence.

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.

Response:
Thank you for your comment. We corrected the sentence as follows.

(p.6, Lines.88)
The independent variables included in the multiple **binomial logistic regression** analyses.

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.

Response:
Thank you for your comment. We additionally described about the information of employment status. Please check the following sentence.

(p.6, Lines.75-76)
educational level (junior and senior high school graduations, 2-year college degree or equivalent, and 4-year college or higher degree), **and employment status** (non full time worker or full time worker).

7. **Results, line137**: The OR 0.75 refers to a lower, not higher odds as written out. Please correct the sentence.

Response:
Thank you for your comment. We corrected the sentence as follows.

(p.9, Lines.139)
women who worked full time had significantly **lower** travel-related physical activity (OR 0.75;
95\% CI 0.59–0.96).

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

Response:
Thank you for your comment. We erased this sentence.

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

Response:
Thank you for your comment. We corrected the reference number.