Author's response to reviews

Title: A gender perspective on factors that influence outdoor recreational physical activity among the elderly

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Author's response to reviews: see over
Author’s response to reviews

Title: A gender perspective on factors that influence outdoor recreational physical activity among the elderly

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Author’s response to reviews:

Dear Editor,

Please find attached the revised version of our MS 4987050132352029. Based on reviewer’s suggestions, we have revised the manuscript. Our responses to the reviewer’s comments begin below. We would like to thank the reviewers for their helpful comments and we hope that this revised manuscript will meet approval. The manuscript has been copyediting by International Science Editing.

Kind regards,
Katarina Sjögren

Reviewer #1 (T.Kostka)

Major Compulsory Revisions

Abstract
1. Give some principal data, e.g. number of participants.
   **Response:** We have added following to the abstract, page 2, line 7-8: This study included 999 individuals 60-96 years of age. Data collection was carried out during the years of 2001-2003.

Methods
2. The recruitment procedure needs better clarification, especially the age of participants (page 5, lines 9-12, presentation in Table III)
   **Response:** We re-wrote in more descriptive manner, page 5, line 16-20: This study included individuals 60-96 years of age. Those invited to participate were randomly selected members of the 60-, 66-, 72-, and 78-year age cohorts and all surviving members of the 81-, 84-, 87-, 90-, 93-, and 96-year age cohorts. The purpose of the data collection design was to receive a randomly selected sample, representing the old population in a broad variation of ages.
3. How the combined dependent variable was set:
- the relative input of light and intense activities was the same?

**Response:** Our purpose was to investigate whether there was any outdoor recreational PA, and thus the answers to the two survey questions on light and more intense outdoor recreational PA during the last 12 months were put together and dichotomized. We have made this clearer in the manuscript that the relative input was the same, page 6, line 21-22.

- what about activities 4 times per month?

**Response:** The response alternatives were as described; never, 1 time per month, 2-3 times per month, several times per week and every day. We are well aware of that there is a step between 1-3 times per month to several times per week, and that this could be a limitation of the study. As we have mentioned at page 13, line 16-17, the survey question used to check PA should be seen as a fairly simple measure of PA and may not be as strong as more advanced and validated instruments of PA for the elderly.

Results

4. Page 7, line 4: 756 (83%) needs explanation.

**Response:** The word “unwillingness” is missing. We have corrected this.

5. Page 7, lines 9-11: this sentence needs re-editing. It would be useful to add numbers and percentages of participants performing outdoor activities within each category to Table II.

**Response:** We have added numbers and percentages to each category in Table III (the table that before was named Table II).

6. Logistic regression should be presented as single (binary) logistic regression and multiple logistic regression. Repetition of results on page 9 and 10 is redundant. Table V (page 10 line 4) is not available.

**Response:** All repetition on statistical has been deleted and is now only shown in Table IV. However, we seem it is important that the interpretation of the table still is presented in the text and according to this we have kept the text on page 9. To make it clearer, we have added: “Stepwise multiple binary logistic regression was used”, page 6, line 17-18.

7. Significant relationships obtained with chi-square should be also visible with single logistic regression, e.g. for cohabiting.

**Response:** In the fourfold table, we only compared PA to another variable giving result for the effect from a single variable on performing outdoor recreational PA (a double classification with totally 4 groups). In the regression, we were interested in the dependency of performing outdoor recreational PA on several explanatory variables, not just one. Since it is not almost never only one or two variables that cause a condition, we chosen to focus more on the results from the regression analyses method as we believe it have a stronger impact and gives a more correct result as compared to the fourfold table. The regression also takes confounding factors into consideration.
However, we believe that our results are strengthening when more than one calculation is showing the same results and we have presented these results more clearly:

On page 10, line 19-21: Not surprisingly, the marker we used for health and independence, i.e., being able to bathe or shower independently, was found, in both the fourfold table and the logistic regression, to positively affect the performance of outdoor recreational PA among both men and women.

On page 11, line 1-4: Our findings, from both the fourfold table and the logistic regression, stressing the importance of having access to areas for country walks agree with data from previous studies [28] showing that the performance of PA is significantly influenced by access to a park or a recreation centre.

On page 11, line 14-16: Our results, from both the fourfold table and the logistic regression, show that smoking habits among men and educational level among women are important factors which affect the probability of performing outdoor recreational PA.

8. It seems better to change coding “yes” and “no” answers of “being able to bathe or shower independently” and “having access to areas for country walks in Table III. This would give values >1 and improve the interpretation of data from Table IV.

**Response:** We have changed the coding. We have also corrected the wrong coding, there 1 was supposed to be coded as 0 and vice versa. After this we also corrected the OR.

9. Interpretation of interactions (pages 9, 10 and Table IV) is difficult to follow.

**Response:** At first, we have to correct that it was age group 81-87 and not as said before age group 72-77. We have corrected this in the manuscript. We added following at page 9, line 16-17: However, the interaction variable showed that if the participant 81-87 years of age and had access to areas for country walks, the probability increased.

10. Page 14, line 18: more rapid decline of women’s participation should be documented in results.

**Response:** We now present this finding in the results, page 9, line 15-16.

Minor Essential Revision

**Response:** All Minor Essential Revisions have been done.

Discretionary Revisions:

**Response:** All Discretionary Revisions have been done.

Reviewer #1 (S Y Pan)

**Majory Compulsory Revisions:**

1. Please specify the survey year and sample size in the abstract.
Response: We have added following to the abstract, page 2, line 7-8: This study included 999 individuals 60-96 years of age. Data collection was carried out during the years of 2001-2003.

2. Page 5, 2nd paragraph: “This study includes a random age-stratified sample of persons aged 60, 66, 72, 78, and 81 years selected from the population registry. The entire population aged 84, 87, 90, 93 and 96 years were invited to participate”. This description is no clear: Does it mean that only persons aged 60, 66, …, 84, 87, …were selected, or people were selected by age-stratification of 6-year age group and 3-year age group?
Response: We re-wrote in more descriptive manner, page 5, line 16-20: This study included individuals 60-96 years of age. Those invited to participate were randomly selected members of the 60-, 66-, 72-, and 78-year age cohorts and all surviving members of the 81-, 84-, 87-, 90-, 93-, and 96-year age cohorts. The purpose of the data collection design was to receive a randomly selected sample, representing the old population in a broad variation of ages.

3. Gymnastics can be performed both indoor and outdoor. It is more likely to be performed indoor. The questionnaire did not specify outdoor gymnastics.
Response: We believe the word “gymnastics” was not the correct word and thus misleading and that it shall not be included. We have deleted it from the text.

4. The authors need to describe in more detail on how physical activity was assessed. What scale of PA was assessed by the questionnaire? How did the authors combine light and more intense PA? How did the authors differentiate between persons who did only light PA and persons who did only more intense PA even though they did with the same frequency?
Response: As we declare in the discussion, a weakness of the study is the simple assessment of PA without any validated questionnaire. This shortcoming has been acknowledged by the authors and is counterbalanced by some novel data presented in the discussion. Our purpose was to investigate whether there was any outdoor recreational PA, and thus the answers to the two survey questions on light and more intense outdoor recreational PA during the last 12 months were put together and dichotomized. In page 13, line 16-18 we have discussed this, “The survey question used to check PA should be seen as a fairly simple measure of PA and may not be as strong as more advanced and validated instruments of PA for the elderly”.

5. The authors should give a table displaying the amount of PA by various factors such as sex and age group.
Response: We have added numbers and percentages to each category in Table III (the table that before was named Table II).

6. Page 7 and 8: It is clearer to use a table to show the results on “Differences between groups and factors with significant influence on the probability of performing outdoor recreational PA among men and women”.
Response: We now present this Table IV.
7. Table III and related text description in the result section should be in the method section.  
**Response:** We have moved the text and table to the method section.

8. How the authors reach conclusion of a positive association of being able to bathe and shower independently and having access to areas for country walks with physical activity performance? Table IV suggested that these two variables were inversely associated with physical activity, not positively (ORs<1).  
**Response:** We have corrected the wrong coding, there 1 was supposed to be coded as 0 and vice versa. After this, we also corrected the OR.

9. Page 10, discussion, 1\textsuperscript{st} and 2\textsuperscript{nd} paragraph: There is no data showing in the table or text that women were as physically active as men. In fact, there is no presentation of data in the distribution of amount of physical activity by any variable.  
**Response:** This is now shown in Table III.

10. The response rate for this study is 43.2\% (999/2312). The authors should discuss the implication of this low response rate.  
**Response:** We have added this to the discussion, page 13, line 20-25: This study had a rather high share of non-participants (response rate 43.2\%). Non-participants increase threats to the external validity, and generalizing the findings has to be done with caution [36]. Owing to the formulations of the questions on PA, people with major functional limitations did not find them relevant to answer. Therefore, the response rate among those \(\geq 81\) years was low, that has also affected the total response rate.