Author's response to reviews

Title: Social participation and mental health: Moderating effects of gender, social role and rurality

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Author's response to reviews: see over
Thank you for the opportunity to revise our manuscript for the second time. The reviewers’ suggestions have been carefully considered and the appropriate changes have been made.

**Reviewer#1’s comments:**

_The authors answer that age, income and years of education were now treated as categorical variables in the regression analyses (which can be seen in Table 3) but in the methods section (p. 8) it is said for years of education that “We used midpoints of each scale to treat these variables as continuous in the analysis:”. Should this sentence be deleted?_

Thank you for pointing it out. We have deleted the sentence (page 8, line 8).

_The authors have given the number of persons excluded because of depressive symptoms at baseline in their answer, but this should be given in the methods section of the manuscript._

We now explain the number of respondents excluded due to depressive symptoms at baseline in Method section (page 7, line 4).

“(i.e. 1,650 respondents were excluded due to depressive symptoms at baseline)”

_The fact that persons with depressive symptoms at baseline were excluded (which have not been the case in many previous studies) can be seen as a strength of this study._

Thank you for your suggestion. We have added the sentence emphasizing that point (page 14, line 8).

“In addition, because our analyses focused on only new occurrence of depressive symptoms (i.e. respondents who already had depressive symptoms at baseline were excluded), the causal interpretation of our findings is strengthened.”
Last, I am not fully satisfied with how the authors answer to the question whether it can be a problem, for example for the generalisability of the results, that the study is based on 2,728 subjects of the original sample of 23,152 persons. A large part of this is due to non-response and part is due to depressive symptoms at baseline. But if 7,855 responded to the second wave and 1,650 were omitted due to depressive symptoms, where did the remaining 3,477 persons disappear when 2,728 were included in the study? The authors should be more detailed in explaining this (in the methods) and whether it has any implications for the study results (in the discussion).

First, the 3,477 respondents were excluded due to missing values for the variables used in our analyses (i.e. sex, age, annual household income, the number of family members, years of education, marital status, social participation, role in the organizations, and the Geriatric Depression Scale). We now explain this in Method section (page 7, line1).

“3,477 respondents were omitted because they were missing values for the above variables.”

Second, the number of respondents who were omitted due to missing values is relatively high. We acknowledge this as a limitation of the present study. We have added a discussion on this point as a limitation of this study (page 15, line 3).

“Second, a high number of respondents were omitted from our analyses because of missing values. Generally, missing responses tend to be higher among older people and in mail surveys. The missing responses may have biased the findings of our study.”
Reviewer#2’s comments:

There is only one very minor thing I will comment on - I still think, for clarity, the figure labels themselves need to clearly refer to the fact that figure 1 relates to men and figure 2 to women, however the reader can work this out from the text describing the figures.

Thank you for your comment. The figure labels now clearly state that figure 1 relates to MEN and figure 2 relates to WOMEN (please see each figure label).

We would like to thank the Editor and Reviewers for their helpful suggestion. With these revisions, we hope that our paper is now acceptable for publication. We look forward to hearing from you.

Sincerely