Author’s response to reviews

Title: Productive activities, mental health and quality of life in disability: Exploring the role enhancement and the role strain hypotheses

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Productive activities, mental health and quality of life in disability: Exploring the role enhancement and the role strain hypotheses.

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Dear Dr. Barke, Dr. Kokko and Dr. Kleinstäuber

We are pleased that you consider our manuscript eligible for publication in BMC Psychology and would like to thank you very much for again taking the time to help to improve our manuscript. Please find a point-to-point reply to your comments below.

Yours sincerely,

Christine Fekete on behalf of the co-authors

Reviewer reports: Katja Kokko, Ph.D. (Reviewer 1):

Reviewer’s comments on the revised manuscript titled "Productive activities, mental health and quality of life in disability: Exploring the role enhancement and the role strain hypotheses"
I thank you the authors for the revised version of the manuscript in question. They have been quite responsive to my previous comments. In only have a couple of remaining points.

First, since the results and discussion are now for the first time available to the reviewers, I can see that the role of gender in the association between productive activities and mental health/quality of life is both taken into consideration in all the analyses and then discussed. I would suggest that some hypothesis for its expected role was presented in the context of the research aims (p. 5). To lay ground for the hypothesis, it might be helpful to add information to the previous chapter (p. 5). Now, the chapter implies that there are gender differences (e.g., "…engagement in productive activities varies substantially by gender…") but the exact differences are not described.

- We have now shifted the issue on gender differences at the end of the Introduction, indicating that the documented gender differences led to the decision to perform stratified analysis, using an exploratory approach (see p. 5, lines 117ff.):

  “Given traditional gender roles and gender-specific occupational experiences and qualifications [29-31], engagement in productive activities varies substantially by gender [24, 32]. For example, there are substantial gender differences in the prevalence and subjective importance of paid and unpaid productive engagement, supporting the importance to perform separate analysis for men and women.”

- Second, if I understand it correctly, the present participants were over 16 years. Further, in order to be included in the present sample the participant had to be in an employable age, the maximum of which was < 64 years for women and < 65 years for men.

I have two questions:

First, is the minimum age for a person to be employed 16 years in Switzerland and,

- Yes, this is the case for Switzerland. We added a statement to the methods section (see p. 6, line 148ff.):

  “The sample of the present study was restricted to 1198 persons in employable age. The lower age limit of 16 years was defined by the inclusion criteria of the study and the fact that many adolescents start an apprenticeship at the age of 16, which is to be considered as first paid employment. The upper age limit was defined by the legal age of employment in Switzerland (<65 for men, <64 for women).”

Second, is there any reason to expect differences in the productive activities as such and their links to mental health/quality of life to differ between a 16-year-old and a 65-year-old person? I previously had a comment on the possible moderator role of age but the authors presented well-grounded arguments against this suggestion. But I am still wondering if the role of age could at least briefly be speculated in the discussion (on, e.g., p. 13).
We agree with the reviewer that age would be a potentially important moderator and have added a discussion on this issue (see p. 13, line 336ff.):

“Age is another potentially relevant personal factor that may modify the associations of productive engagement with mental health and quality of life, related to variation in the subjective importance or the societal evaluation of different productive activities over the life course. Future studies may provide insights into the moderating role of age of productive engagement on wellbeing and mental health.”

Third, on p. 6, the formation of the load of engagement variable is described. The load of four activities (paid work, volunteering, education, and housework) was assessed on the basis of hours per week (from 0 to > 35 hours). Then, a total score for productivity was calculated, with a score ranging from 0-100 hours. I have to say that I got a bit confused with the score range, particularly, the score maximum. Is it an observed maximum score?

- Thank you for this feedback. We agree with the Reviewer that the description of this variable might not be clear. It is important to note that the variable ‘total productivity load’ (0-100 score) does not indicate hours of engagement, but is constructed based on the four productivity variables which were assessed by a six-point scale on ranges of hours per week (0; 1-8; 9-16; 17-24; 25-35; >35). The categories were then coded as ‘0 hours’ = 0; ‘1-8 hours’ = 1; ‘9-16 hrs’ = 2; ‘17-24 hrs’ = 3; ‘25-35 hrs’ = 4; and ‘>35 hrs’ = 5. Based on this coding, we calculated a score ranging from 0-100 (sumscore of all productivity variables multiplied by 5). We have now expanded the explanation of how the 0-100 score has been calculated to the methods section (see p. 7, lines 162ff.):

“To calculate the total productivity load, the categories on engagement load were coded as follows: 0=0 h; 1=1-8 h; 2=9-16 h; 3=17-24 h; 4=25-35 h; and 5=>35 h. Based on this coding and in accordance with recommendations from the USER-P developers [36], we calculated a score ranging from 0-100 to assess the total productivity load (sumscore of all productivity variables multiplied by 5).“

Finally, regarding Figure 1, I am wondering if the terms "mental functioning" and "well-being" should be adjusted to the terminology of the present manuscript.

- Thank you for identifying this inconsistency, which we have corrected now.

Maria Kleinstäuber (Reviewer 2):

The authors addressed all comments very well and straightened the manuscript substantially. After I had the chance to read also the Results and Discussion section many aspects of the paper became clearer for me. I recommend the study for publication in BMC Psychology.

- Thank you for your positive response!