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 functioning and well-being in disability: Exploring the role enhancement and the role strain hypotheses. Christine Fekete, PhD; Johannes Siegrist, PhD; Marcel WM Post, PhD; Martin WG Brinkhof, PhD

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 taking the time to provide us with helpful comments to improve our manuscript. Please find a point-to-point reply to your comments below.

Yours sincerely,

Dr. Christine Fekete on behalf of the co-authors

Editor Comments:

Dear Authors,

both reviewers agree that your manuscript assesses and important and interesting question and uses a well-sized sample. Another strong point of your manuscript is the theory-driven approach. When submitting the full manuscript, please make sure that you also address their concerns.
Some may be resolved by including more detailed descriptions in the method section. Others by including points in the discussion / limitation sections.

- Thank you for your positive response. Please note that we have changed the term mental functioning to mental health, as other researchers of our group including the ‘SF-36 Mental Health Index’ use the term mental health instead of mental functioning and we aim to be consistent throughout our publications.

Reviewer reports:

Katja Kokko, Ph.D. (Reviewer 1): BMC Psychology Reviewer's comments on the manuscript titled "Productive activities, mental functioning and well-being in disability: Exploring the role enhancement and the role strain hypotheses"

The main of the present study is to analyze the links of engagement in productive activities (i.e., paid work, volunteering, education, housework) to mental functioning and well-being among a representative sample of 1,157 Swiss women and men with a severe spinal cord injury (SCI). Both load and diversity of productive activities were considered. Their associations with mental functioning and well-being, after controlling for several covariates, will be examined using Tobit regressions. The results will be interpreted in light of two competing hypotheses of Role Theory, namely, role strain and role enhancement.

The abstract, introduction, and methods are generally well written and the main aim of the study is to a some extent innovative, particularly its focus on the individuals with a disability, which is shown to reduce engagement in productive activities. Here, it will be tested whether an engagement is related to either a high or low level of mental functioning and well-being.

- Thank you very much for acknowledging the importance of our work.

However, there are a couple of issues, which currently limit the potentiality of the manuscript. First, well-being is assessed in the present study using a scale for the quality of life (WHOQoL-BREF). I would consequently use the term "quality of life" when referring to it. Quality of life is a broader concept than mental well-being, including satisfaction with one's life circumstances. On the other hand, mental well-being can be characterized by one's feelings of happiness as well as positive and (low) negative affectivity, dimensions related to personal growth and resolution of social tasks and encounters (e.g., Keyes, 2005). The change of well-being to quality of life have implications for the introduction where the main concepts are defined.

- We agree with the Reviewer that the term well-being encompasses a cognitive as well as an affective component and that the term quality of life better describes the outcome used in our study. We thus have changed the term ‘well-being’ to ‘quality of life’ throughout the manuscript.

Second, it would be useful to give a reader further information about the particular characteristics of the SCI individuals in relation to productive activities.
- We have now added some more information to the Background section (p. 4, lines 104-109):

“Given their pronounced functional limitations, persons with SCI often face environmental barriers to engagement in productive activities, such as inaccessible infrastructure or negative attitudes [23-25]. While figures on engagement in unpaid productive activities in SCI are widely lacking, participation in paid work in persons with SCI is well described. The average global employment rate is estimated at 37% [26], with considerable variations between countries, ranging from 11.5% to 74% [27].”

References:


Third, it can be argued that there are gender differences in engagement in productive activities and their links to mental functioning and quality of life. But only one reference (26), from 1995, is given to justify the gender issue. There may be more and more recent studies on this topic. Please update the references.

- We fully agree with the Reviewer that these References are somehow outdated and added more recent studies on the gender issue (p. 5, lines 110-112).

“Given traditional gender roles and gender-specific occupational experiences and qualifications [29-31], engagement in productive activities varies substantially by gender [24, 32].”

References:
Fourth, age will be considered as a covariate. However, I am wondering if it might alternatively be studied as a moderating factor, that is, to see whether the association between engagement in productive activities and mental functioning and quality of life is dependent on the age of the SCI individual.

- This is indeed an interesting question. As we only include adults of working age in this analysis, the variation and potential impact of differences in ages may be limited. Further differentiations of the moderating role of age within the working age group is not foreseen, as we include a comprehensive set of variables describing the engagement in productive activities (i.e., five variables describing ‘load of activities’; two variables describing ‘diversity of activities’), it would be beyond the scope of this manuscript to test interactions of age and productive engagement.

Finally, in the context of the sample description, the reader is referred to previous publications for further information. I would recommend that more detailed information about, for instance, the attrition and representativeness of the sample was given in this manuscript too.

- We have now added information on the reminder management (p. 5, lines 126f.), the exclusion criteria (p. 6, lines 138ff.), and the representativeness of the sample (p. 6, lines 144-145):

Reference:

Maria Kleinstäuber (Reviewer 2):

The current manuscript addresses an interesting and innovative idea. Authors try to transfer assumptions of a role strain versus a role enhancement model on a population of physically disabled individuals. The current peer-review covers only the Introduction and Methods because the manuscript is part of the results free review program. Another strength of the study is the big and representative sample. Well validated measures were used. However I am not totally convinced if the authors thoroughly thought through their research questions. My major comments refer to the authors' research questions and hypotheses and related statistical analyses (see below)

Major comments

Introduction

#01: p. 4/l. 107: Could you be more specific about your second research question? What do you exactly expect? What is your hypothesis?

- As described in the second paragraph of the Introduction, there are two contrasting hypothesis that we aim to explore (i.e., role enhancement = larger diversity of productive roles increases mental health and well-being; role strain = larger diversity of productive roles decrease mental health and well-being). We are thus only testing these two hypothesis, without an a priori preference for one. To further specify this, we added a sentence in the objectives statement at the end of the Introduction (p. 5, lines 117-119):

“The positive association of diversity in productive activities and mental health and QoL would support the role enhancement hypothesis, while a negative association would lend support to the role strain hypothesis.”

#02: p. 4/l. 107: Could you be more specific about your second research question? What do you exactly expect. What is your hypothesis?

(same as #01, see response above).

Methods

#03: p. 6/l. 140: The discussion and limitations of the outcome "engagement in paid work" should be discussed later (in the Discussion section). It is possible that participants indicate to be engaged in paid work although they are probably on sick leave.

- In fact, we measured the current employment status with an item from the Utrecht the Utrecht Scale of Evaluation in Rehabilitation-Participation (USER-P), assessing hours spent in four different productive activities during the last four weeks, and not with a question on employment status. It is thus highly likely that participants on sick leave during this whole time answered
with ‘0 hours’. It is not very likely that participants on sick leave would indicate their usual engagement since there is little room for misunderstanding.

#04: p.7/l. 170: You should later discuss in your manuscript that probably important confounders are missing, e.g. way of coping or acceptance, personality characteristics which influence the way of dealing with the disability, social support...).

- We agree with the Reviewer that this is a limitation which needs to be discussed. We have included this issue in the Limitations discussion (p. 15, lines 386ff.):

“Also, bias due to unmeasured confounders such as acceptance of the disabling condition or personality traits that may be related to the engagement in productive activities as well as to mental health and QoL cannot be excluded.”

#05: p. 7/l. 172: You include "completeness of lesion" as confounder. Would it be much more important to include the variable "coping with lesion" as confounder, wouldn't? I expect that level of completeness of lesion and how well people deal with the lesion are not necessarily strongly correlated strongly. However I expect that the way how individuals deal with their lesion is much more important as confounding variable.

- Unfortunately, we have no data to assess people’s coping with the disability. We have added this issue related to unmeasured confounding to the Limitations discussion (see #04):

#06: p. 7/177: Authors state that acute health conditions were not included as confounders. It is important to add this to the limitations in the discussion later.

- This has indeed been discussed in the Limitations section; (p. 15, lines 384-386):

“Furthermore, we cannot test whether the occurrence of acute health conditions impacts on current productive engagement and the exclusion of acute health conditions as confounders might lead to bias in observed association.”

#07: p. 8/l. 190: The statistical analyses should be checked by an expert. I'm not sure if it is appropriate to account for missing values in potential confounders with multiple imputation.

- It is commonly accepted that missing values in confounders, similar to main explanatory variables, need accounting for by multiple imputation (our method of choice) as to facilitate unbiased inference when analyzing incomplete data, irrespective of study design. We have now added the standard book addressing these issues (Carpenter J, Kenward M. 2013. Multiple Imputation and its Application. Pp 364. John Wiley & Sons.)

#08: p. 8/l. 201: I do not understand what you exactly expect as result from the regression. I assume you want to find out if there is either a positive or a negative association between predictors and outcomes (after controlling for confounders)? Do you want to find out if either the role strain or the role enhancement model fits well in your sample? Would you consider a positive association to allude to a role enhancement model and would you consider a negative
association as hint for a role strain model? Could it be also possible that you have two subgroups? One subgroup in which the role enhancement model can be confirmed and one subgroup in which the role strain model is applicable (probably dependent on how individuals deal with their disability)?

- We have now added a sentence to the objectives-statement to clarify this issue (see also #1; p. 5, lines 117-119):

“The positive association of diversity in productive activities and mental health and QoL would support the role enhancement hypothesis, while a negative association would lend support to the role strain hypothesis.”

- In this manuscript, we only included the subgroup of gender.