Reviewer's report

Title: Impacts of mobility disability and high and increasing body mass index on health-related quality of life and participation in society: a population-based cohort study from Sweden

Version: 3 Date: 2 December 2013

Reviewer: Simone Gill

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Review for “Impacts of mobility disability and high and increasing body mass index on health-related quality of life and participation in society: a population-based cohort study from Sweden”

The authors conducted a longitudinal population-based study to examine associations among body mass index, mobility disability, and health-related quality of life. They found that a higher percentage of individuals with mobility disability were classified as overweight or obese and that individuals with mobility disability reported lower health-related quality of life. They suggest that the findings can provide support for interventions to prevent weight gain in those with mobility disability.

This was a carefully conducted study that provides important information on the long-term effects of weight status on mobility disability and health-related quality of life. I have minor comments about providing a rationale for the inclusion criteria and for clarifying the presentation of the results. I suggest minor essential revisions.

TITLE
- The title clearly reflects the main ideas presented in the paper. It is as concise as possible given the multiple components involved in the study.

ABSTRACT
- The abstract was accurate, concise, and specific to the findings demonstrated in the study. The purpose was very clearly stated and the study rationale was clear.

INTRODUCTION
- The introduction was clearly written and provided an adequate framework for the purpose of the study and the interpretation of the findings later on in the manuscript.

METHODS
The authors need to provide a rationale for some of their inclusion criteria, especially as it relates to obesity
- Page 6, second paragraph – Why did the authors include BMI, height, and weight gain cutoffs instead of just analyzing all of the data available for 18-64 year-olds? It seems that including all of the data would be beneficial in terms of allowing for the largest sample possible. If there is a specific rationale, the authors should include a brief statement in this section or provide a citation if the inclusion criteria were derived from a previous study.

- Page 6, second paragraph – Why did the authors combine underweight and normal weight participants? Given their comment at the end of page 14 about “a distinct association between underweight status and lower HRQoL,” it would seem quite important not to combine these two groups. As above, if the authors had a specific rationale for doing this, it should be included in the method section and addressed in the discussion as to how combining the groups might have affected their results.

- Page 8, statistical analysis – How did the authors determine the order in which variables were eliminated for the stepwise regression? A rationale should be provided since the order of variable addition or deletion is a critical aspect of stepwise regression.

RESULTS
The authors present most of the findings clearly and use adequate statistical tests. However, they need to add to the tables to facilitate interpretation for the reader.

- Page 9, prevalence of mobility disability and weight statuses – The authors state in Table 1 that p>.001, but the text indicates that “The respondents with mobility disability had higher prevalences of overweight status and obesity, with the largest disparity in obesity.” This means that p<.001. The authors need to fix this in Table 1.

- Pages 9 & 10. - It might be helpful to include difference scores in Tables 1 & 3 to highlight the differences for the reader.

DISCUSSION
The authors do a good job of stating how their findings fill a gap in the literature on mobility disability with respect to body mass index based on the similarities and differences to other studies and the contribution of their work to the field.

- Page 16, The authors state that “…high BMI did not play a significant role for the respondents with mobility disability.” They also indicate on the previous page that only 1.1% of their respondents had BMI scores # 40 kg/m2. How do the authors think this might have influenced their results? It would be useful for the authors to posit whether the BMI scores represented in their sample prevented them from finding that high BMI could have played more of a role for those with mobility disability.

CONCLUSIONS
The conclusions are clearly stated.
FORM, STYLE, AND SUBSTANCE
The paper organization is logical, the contribution is novel, and the paper’s length is appropriate.

REFERENCES
The references are up-to-date and correct.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests.