Reviewer's report

Title: SRH and HrQOL: Does Social Position Impact Differently on Their Link with Health Status?

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Reviewer: Jennifer Dowd

Reviewer's report:

This paper uses data from a representative French national health survey to test whether the association of self-rated health (SRH) and Health-Related Quality of Life (HRQoL) with two more functional limitations and chronic back pain differs by socioeconomic position (SEP). The paper is motivated with reference to the hypothesis that different social groups may have different health expectations that would lead them to translate specific health conditions into subjective health status differentially. “As expectations seem to be higher among people with high SEP, the same disease may have a more negative impact on SRH among them than among people with low SEP.”

Major Compulsory Revisions:

While this question is of large general interest and has been addressed in several different contexts to which this French dataset could be a new contribution, I have reservations about the paper for the following reasons. First, the authors are not transparent enough about how their logistic and multivariable regression models translate into the numbers in their tables. Partly due to this problem, the empirical findings are not consistent with the conclusions of the authors and how this reflects on the broader literature regarding the use of subjective health measures to study social inequalities.

1.) Specifically, I have a problem with the interpretation of results such as:

Page 10: “In age-adjusted models, the odds of reporting poor SRH in case of lower back pain were higher in more educated men than in those with lower educational attainment.” From my reading of the tables and implied models, this statement is either wrong or misleading. Based on Table 2, given that the proportion reporting poor SRH in the presence of back pain is 28% for the highest education group while it is 47.8% for the lowest education group, how can the odds for reporting SRH be higher for those with the most education based on these models? The model used and the method for calculating odds based on the model coefficients needs to be explained more specifically. Are these odds calculated adding the main effects of education plus the interaction effect? It seems rather that the ORs might reflect just the interaction effect, which does not accurately describe the results statement above. If only the main effect is described, you are only describing a relative increase in odds associated with back pain compared to those in the same education group, not compared to a different education group.
2.) Similarly in Table 4, it is not clear what “regression coefficient” represents—is it the coefficient on functional limitations alone or the interaction between the highest education category and functional limitations compared to the lowest with functional limitations? Please be explicit about your model and what coefficients are being reported. The subscripts in the table state the comparison groups, but it is still not clear whether by result for education <12 compared to education=12, for example, includes main effect of education + interaction (main effect of FL drops out)?

3.) Because of these problems in conveying the results of the empirical analysis, it is difficult to assess the contribution of the paper to the literature in this area. My impression is that the conflicting results in the paper are a result of these problems with interpretation and may not reflect the underlying results from these data. Looking at the tables in which the scores are stratified by education level, it is quite obvious that even with the same SRH or HRQoL, the lower one’s education the more likely they are report FL or back pain. This would seem the most important result to answer the authors basic question of whether subjective health measures accurately compare health status of different social groups. Looking at the data in this way, the use of the subjective measures underestimates health inequalities in both instances, unlike the conclusions of the authors (Page 6) that inequalities are underestimated for SRH and overestimated for HRQoL.

Minor Essential Revisions:

4.) Results section—it seems that the authors refer to p=.12 as significant in the paragraph about men but not significant in the paragraph for women?

5.) “length of education” is awkward wording—level or years of education?

6.) First paragraph page 10—“length of educational and income” –grammar Should be “The social gradient.” No punctuation at the end of the paragraph.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.