Reviewer's report

Title: Gender differences in mental health problems among adolescents and the role of social support: results from the Belgian health interview surveys 2008 and 2013

Version: 0 Date: 01 Sep 2017

Reviewer: Michael Höfler

Reviewer's report:

1. The authors should avoid inadequate causal language (e.g. "were more influenced by", p.4; mental health problems and social support are likely to share several factors. "Increase the risk", p. 5 etc.).

2. The method section has to report on non-participation and dropout since this could have affected representativeness. Some numbers appear on page 9, but no baseline participation and overall (% completing all required assessments) are provided, let alone how these rates are related with factors that might modify the parameters of interest.

3. Page 7: As far as I know, the SCL subscales (like anxious misery and depressiveness) are so highly correlated that one can hardly separate the dimensions. Likewise, taking these scales as measure of anxiety/depression risk requires substantive arguments and studies who have shown close associations with the disorders. Reading on, it turns out that the authors have even dichotomized these scores to "diagnoses" (same for GHQ). The justification for this with just a reference and no results on classification errors introduced by this is poor. I suspect that this yields many false positives - what may result in large (downward) bias (disregarding other biases) in odds ratios. Why not sticking with the dimensional values? This is what these scales have been made and evaluated for.

4. Page 11: Comparing confidence intervals to assess differences in associations with different outcomes is a very crude method (that e.g. disregards that the samples of these comparisons are dependent). Real multivariate logistic regressions (multiple outcomes, e.g. random effects logistic regression) would allow testing this properly (what is easy with Stata).
5. It remained unclear to me whether this analysis has tested pre-specified hypotheses, or whether the article presents an explorative analysis (with maybe other, unmentioned results). In the latter case hypotheses should only be raised, not claimed that they are true.

6. The discussion should discuss on how bias due to shared factors, measurement and selection (non-participation and drop-out) have affected the results.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.