Reviewer's report

Title: Can Negative Life Events and Coping Style Help Explain Socioeconomic Differences in Perceived Stress Among Adolescents? A cross-sectional study based on the West Jutland Cohort Study

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Reviewer: Malte Persike

Reviewee's report:

First, I wish to apologize to the authors from the beautiful country of Denmark for having mistakenly put them into Dutch territory.

That out of the way, the authors present a resubmitted manuscript with significant modifications and additions to their original submission. Overall, I wholly appreciate most of the revisions. The text is a more fluent read, the theoretical framework and hypotheses are well-structured and clearly laid out. The extensions to the cited literature provide a much more substantiated context to the research questions. The discussion is thorough, particularly with respect to the scarcity of available research in the field. I especially like the new limitations section where major issues of data quality and completeness are discussed. My major gripes remain with the statistical methods employed, despite them having improved considerably over the original submission.

Overall, I find the new manuscript very interesting, much improved and well-suited for publication in BMC if the authors can address the few concerns raised by their handly of the data.

Major

Item 1: Introduction - The authors mention "different aspects" (p. 4) of SES in multiple instances and elaborate on a few of those aspects. Thereafter, they advocate "using more than one measure of SES" (p. 4) to study the social gradient in stress. I would appreciate a more comprehensive section on key measures of SES used in other studies, followed by a sound reasoning why the current set of measures was chosen by the authors. That would elevate the choice of SES indicators above mere accessibility reasons.

Item 2: Introduction - The paragraph starting with "Baseline data in the [...]" (p. 4f) should be moved to the procedure. Moreover, the authors could add some sociodemographic indicators to substantiate their claim that the West Jutland cohort is in most ways representative of the rest of (rural) denmark. A table with sample demographics and a second column for the whole of Denmark would be appropriate.

Item 3: Results - Why were two of the six items of the SSI, i.e., “Have your parents divorced?” and “Have you lost any of your parents because they died?”
not taken from the National Register data? The reliance on self-report data when more objective sources of data are available should be explained.

Item 4: Results - It is puzzling that "girls report more [life] events than boys" (p. 7) since one would not assume the death of a parent or a divorce to be correlated with the gender of the child. Of what sort are those life events that are more frequently stated by girls than boys. Is this a statistical artifact brought about by the large sample size? Does the difference persist if the authors just look at mixed-gender siblings from the cohort? If so, a gender bias in the perception of life events would be present. The authors should briefly explain this point.

Item 5: Results - The authors defend their regime of gender stratification by asking "Why should we not stratify when table 2-4 all show significant gender differences". Stratification is a sampling technique that is often employed in social sciences in order to improve statistical precision and make a sample more representative of the whole population. The authors chose a post-sampling stratification approach for a different reason, namely due to significant differences in the DV between the two genders. What they essentially accomplish by their stratification approach is to a) eliminate gender as a main effect and b) eliminate the effects of gender interactions from the stratified samples, thus simplifying the analysis design. Doing so makes differences in regression parameters between the two strata more difficult to interpret since they can either result from a main effect of Gender or an interaction effect Gender x Y. The authors should be aware of this in their interpretation of the observed parameter differences.

Item 6: Results - Irrespective of the authors' response, I still find the regression analysis quite simple for the data presented. The authors state that interactions and higher order effects are not relevant to their research questions because they are "not interested in testing a lot of exploratory interaction effects that we are unable to interpret afterwards". I am sure that the authors are aware of the statistical mantra to "never interpret a main effect in the presence of an interaction". Simplified example: say there is an interaction between household income and life events that causes stress to be equal in the LowIncome-LittleEvents, HighIncome-LittleEvents, and HighIncome-LittleEvents, while only in the LowIncom-ManyEvents group there would be much larger stress. This would artificially create a main effect for household income and for live events that only stems from an interaction between the two variables. I hesitate to find this not of interest since stating that either income or life events had an effect on stress would be plain false. Interactions could easily be incorporated as mediators in the model and I would love to see the authors be more rigorous in their analysis model.

Minor

Item 7: Discussion - I love that new coping strategy, "meditative coping", but I must sadly assume that "mediational role" is meant (p. 10 bottom).

Item 8: Tables - I understand that KVU and MVU are abbreviations specific to the
Danish educational system. They should be defined in the text.

Item 9: Tables - The tables are formatted in an unusual way for a scientific publication, e.g. vertical borders and double lines. This should be fixed.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests