Reviewer’s report

Title: Higher levels of emotional distress are associated with a higher risk of incident diabetes during 18 year follow-up: results from the British Household Panel Survey.

Version: 3 Date: 10 September 2012

Reviewer: Jessica Browne

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GENERAL COMMENTS

This paper reports on longitudinal data from the British Household Panel Survey that examines the association between general emotional distress and incidence of diabetes. Studies of this kind make an excellent contribution to the literature as they begin the shed light on the precursors to the development of diabetes. I commend the authors on asking such an important question of a longitudinal data set, and for conducting such sensitive and thoughtful analyses to answer their research questions. I do however have some suggestions for further improving the manuscript.

MAJOR ESSENTIAL REVISIONS

- I’m not sure about the categorisation of Activity Levels. If someone is ‘highly active’ I would expect them to be doing moderate-vigorous physical activity multiple times a week. I don’t think walking, swimming, or playing any sport just once a week should be considered being ‘highly active’. Do the authors have a rationale for this classification? If not, this should be discussed in the limitations of the study. This is especially important given the results of the study highlight level of activity as an important variable in the relationship between emotional distress and diabetes.

- I think the clinical and research implications need to be explicated further in order to further highlight the contribution of this manuscript to the scientific literature. For example: What do these results mean for practitioners working with people who may seem to be at higher risk of diabetes based on the variables you highlight? What does it mean for diabetes prevention initiatives, both at the individual level and at the level of government funding/planning? What are the practical implications of undertaking the research you suggest? (e.g. costly, time consuming, probably resulting in lower sample size)

MINOR ESSENTIAL REVISIONS

- There are inconsistencies in the tense used throughout. I recommend proof reading for use of appropriate tense.

- Hazard ratio (the abbreviation ‘HR’) isn’t defined in full the first time it is used in the abstract.


- Is there some information missing from the sentence that references the Copenhagen City Heart Study in the first paragraph of the Background? As it currently reads, it is not an example of emotional distress being associated with the development of diabetes.

- In the Background section the authors aim to make the case that there is limited evidence for the association between psychological distress and incident diabetes, yet they cite 4 - 5 studies that do provide some evidence for this. The argument would be strengthened if the authors could critique the already-published studies and make it clear how their own study adds to the literature over and above the contribution made by those other studies.

- It is unclear what the method of data collection was. The methods section refers to both self-report questionnaires and interviews. Was it a combination of these?

- The first paragraph of the Patients and Methods section features the following sentence: "In each wave data using self-report questionnaires on income and wealth, housing, health, socio-economic values were collected." However, this does not appear to be a comprehensive description of what was included in the data collection, as later in that paragraph when the authors refer to what data was extracted for the current study, it seems to be a new list of variables. It would assist the reader to have a brief description of the scope of the data collection, before learning of the specifics of the data extraction. Further, what is the difference between income and wealth, and socio-economic variables? One would seem to be an example of the other. If I am mistaken on this, perhaps it could be made a little clearer.

- The first paragraph of the Measurement of Potential Confounders section includes the sentence "Energy level, health status, health problems, physical activity and energy level". Is repeated use of 'energy level' a typo?

- In the same section, in the Health Problems sub-section: I suggest moving the last sentence to the first sentence as a way of explaining why these particular health problems were assessed. As the last sentence in the paragraph, the information comes a bit too late.

Same section, Impaired Health sub-section: Impaired health isn't an accurate description of this data, here and throughout the manuscript. You're really talking about impairment of daily activities due to health, not impairment of health itself.

- In the first paragraph of the Statistical Analysis section the authors use the sentence "We use two analyzing strategies.". Replace with "We used two analysis strategies"

-Second paragraph of Statistical Analysis section: delete "We used an inversed sign for the reported change in adjusted logHR so that". This is self-explanatory given the rest of the sentence.

-Third paragraph Statistical Analysis section: replace "hierarchical" with "heirarchically"

- First paragraph, Descriptives section: The following sentence is repetitive, long, and therefore a little difficult to comprehend. Consider breaking up into two
sentences, and emphasising no differences in reported psychiatric problems. This is important but currently gets buried in the length of the sentence. "They reported worse overall health, as the high emotional distress group was overall less energetic, reported more health problems, with increased prevalence of heart/blood pressure, breathing problems, allergies, gastro-intestinal problems, difficulty seeing and headaches, but no differences in hearing problems, and more often reported psychiatric problems."

- First sentence, first paragraph, Additional Analyses section: Repeated use of the word continuous unnecessary.

- Second sentence, first paragraph, Additional Analyses section: should it be "each unit of increase"?

- Third sentence, first paragraph, Discussion: Remove 'however' from the end of the sentence

First sentence, second paragraph, Discussion: Revise to something like "more likely to be physically inactive, or to become inactive"

- Last sentence, second paragraph, Discussion: You mention other factors. It would be worth giving some examples here.

- Third paragraph, Discussion: Once sentence paragraphs are not commonplace. Revise this paragraph to be multiple sentences. This will also serve to put more emphasis on the significant strengths of this study, which may also include a sensitive statistical analysis, and breadth of data available. Could also comment on other features of the sample e.g. its representativeness, retention

- The discussion of the limitations should be made in prose, not in points. Introduce this section with a sentence, and remove "Limitations:"

- Same for clinical implications and research implications

- The manuscript needs a Conclusions section to summarise the main findings and contributions. Currently, the manuscript doesn't underscore its contribution strongly enough, and adding a section to summarise this would help.

**DISCRETIONARY REVISIONS**

- Would the authors consider replacing the word 'subjects' with 'participants' or other word that does not imply that the person is reduced to a number?

- It isn't always clear what level of heading is being used i.e. whether it is a new section or a sub-section

- I recommend putting the Clinical and Research implications before the discussion of the limitations. This will help deliver the key messages to the reader.

- You may not have sufficient numbers, but it would be interesting to run some parallel analyses with the people who did have diabetes at the first wave, and examine their incidence of emotional distress.

**Level of interest:** An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published

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

Declaration of competing interests:

I have received consultancy payments from Roche Diagnostics in 2011 and 2012. I have no other financial or non-financial competing interests.