Reviewer’s report

Title: Family origin and mortality: prospective Finnish cohort study

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Reviewer: Sakari Bertel Alfred Suominen

Reviewer’s report:

This is a well written ms with a good idea for the statistical analysis and deserves to be published. However, I have some comments I find that the authors should respond to before I can unconditionally recommend acceptance for publication.

The study deals without doubt with premature mortality. Hence, one could assume that the hereditary factors play in these cases a greater role than in total mortality from e.g. cardiovascular diseases. This should be commented more in the Discussion. Moreover, I also find that the authors’ conclusions are somewhat too strong. The authors themselves state that the border pointed out in Figure 1 between Western and Eastern Finland also reflects cultural differences. Hence, could not one explanation for the findings also comprise ‘social’ inheritance, e.g. learned patterns of behavior dealing with diet or coping with risks in life that are transferred in a patriarchal manner downwards? This possibility should also be commented and discussed. Moreover, a limitation of the study is that the causes for death for the particular data analyzed are not known. It would be interesting to test whether the present findings would be stronger in disease related mortality as compared to mortality e.g. to external causes.

Minor comments

The first sentence in the Abstract describing the findings ‘Finnish speakers born in eastern Finland had an increased death risk of 1.13 (95% confidence interval 1.01 to 1.26) as compared to persons born in western Finland, whereas the relative risk for Swedish speakers was only 0.60 (0.52 to 0.71)’ is not easily understandable before taking part of the ms text and should be clarified. Also in the Abstract should be clarified that the numbers in the results stand for risk ratios.

The variable about place of birth of parents and study person is according to my opinion not clearly enough described in the ms and could be clarified.

The authors state that there was information also about parental education and parental socioeconomic position, but since they correlate strongly with the study persons’ educational level, they were excluded from the models presented in Table 5. However, we know this correlation being far from one especially in the Nordic countries and the decision could be further justified. Would an inclusion of the variable seriously have disturbed the analysis?

As the authors state Table 3 contains a lot of observations already known and
could also be left out if the information is given in the text.

In Table 5 it is stated that Swedish speakers were excluded from these models due to over-specification. Here I would like to have further details e.g. in the text.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**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.