Reviewer's report

Title: The contribution of childhood circumstances, current circumstances and health behaviour to educational health differences in early adulthood.

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Reviewer: Johan Fritzell

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Review BMC: The contribution of childhood and current circumstances, health behaviours to educational differences in self-rated health in early adulthood, Kestilä et al.

This paper is one of many recent studies trying to disentangle socio-economic health differences with a life course perspective measuring both the impact of childhood and health behaviours. The strength of the study is the particularly detailed measurement of childhood characteristics; a weakness that these variables are collected retrospectively with obvious recall bias problems.

Major compulsory revisions

1. My main difficulty with the paper as it stands now relates to the uncleanness of the analytical design and how the major group of factors (childhood, health behaviours, current circumstances, and achieved education) are supposed to be causally related to each other and how they, in turn, are related to chronological time. Since socio-economic position here is measured by education and education in time comes before present circumstances, and sometimes before health behaviours, the relation between the mediating factors and what is tried to be explained (educational differences in self-rated health) is muddled. It is in my mind not enough to have a sentence or two about that in the concluding discussion but it needs to be discussed properly in the background and the authors’ model needs to be more clearly presented. I do realise that educational differences in health is the measure of socio-economic differentials used but still think that a model presented early on in the paper would clarify the forthcoming analysis.

Detailed comments (page by page)

Abstract

2. Although much remains to be known the authors exaggerates in the background section how little we know, as also is indicated by the massive number of references on the overall topic despite the fact that I lack several recent reviews on dealing with the life course perspective.

3. Page (P) 3 1§ Since the relative contribution of the major factors are likely to differ depending on the outcome (see e.g. the review by Galobardes et al 2004) it seems unlikely that any overall consensus is to be found for the relative role of various factors.
4. P 3 data and methods. 68 percent response rate: Is anything known about the non-response?

5. P4 childhood characteristics. It remains a bit unclear how many variables are included since more than 7 is reported in result section later on

6. P4 current circumstances: the major variable education should be presented more exactly. What is medium and high in the Finnish case? Morover, on-going education, probably a large fraction of the sample, is measured as completed. What is the likely effect on the result?

7. P5 health behaviours: the categorisaton of physical activity don’t match the mentioned recommendation. Why?

8. P8 §1 odd level of significance p<0,25

9. P9 first sentence. There is ample evidence that parental education is a strong predictor for own education. How is the finding here explained and what is the interpretation?

10. P12 Last § The suggested pathway is possible but I fail to see how the results here are supporting that view.

11. P21 Table 2 Is footnote b really correct? If the major part of educational differences in health for men disappear when adjusting for childhood family how come nothing happens for all? Is it increasing strongly for women when adjusting for childhood family?

12. P22 Table 3 Mismatch between OR and CI in row 6( Childhood&behavioural factors)since the parameter estimate is outside the CI

**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