Reviewer’s report

Title: Inequality in oral health related to early- and later-life socioeconomic position (SEP): a study of elderly in Norway and Sweden

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Reviewer: Roger Keller Celeste

Reviewer’s report:

General Comments:

This is a timely work that helps to answer a well defined gap in current life course literature. It is well written and clear, with sound data. Sample size is also large and population based, with limitations acknowledge by authors in the discussion. Although the manuscript is already good, I believe some theoretical points may be further clarified, as they are key to understand the results.

Major Compulsory Revisions

Abstract:
1- There is no reference to analytical methods in the methods section, only in the results section (i.e. GEE). I think this is confusing.

Introduction:
2- Reference 13 does not clearly describe the social mobility hypothesis, with distinct trajectories (upwards-downwards) as an explanation. This, indeed, came in later publications from the same authors (e.g. Kuh JECH 2003; Hallqvist SSM 2004) and was operationally described by Mishra et al (IJE 2009). As I understand, some models may operate simultaneously, but not any combination. For example, if evidence supports that adult health is directly associated with downward trajectory (poverty in adulthood) and not upward trajectory (poverty in childhood), then it refutes that the critical period model.

3- It seems there are two objectives in the manuscript: a) to examine if inequalities change with ageing; b) to test if early and later life SEP are associated with tooth loss and “quality of life” (OIDP). Considering that they have only a 5-year follow-up with tooth loss data from self-reported, I do not believe there would be changes beyond random error. I would like to see from authors why they think objective “a” is appropriate, I recommend keeping it for a longer follow-up.

Methods:

4- state what was the purpose of the surveys in both countries. It they had only descriptive objectives, representativeness is important.
5- it is highly discussable that gender, country of birth and marital status could represent socioeconomic position on theoretical grounds. At best, they might be an indirect measure of SEP. I would like to see some good reference for such a choice, but, in the end, I would get stick to the true SEP measure that you have (education and work). The dubious choice of early life SEP measures compromises the interpretation of the results because the pathways between, for example, marital status and tooth loss do not go completely through socioeconomic position.

6- as you have dichotomized your outcome, have you tried to work with the incidence between 2007-2012 to get incidence OR? Did results change?

Discussion:

7- Overall, discussion could focus more on the objectives and main results. For example, the first paragraph has a lot of interesting comments that do not discuss the main results. Other paragraphs have to some extend the same problem, as some discuss welfare policies that are not at issue. I suggest keeping only the essential parts related to your objectives.

8- In regard to the life course results, I have a different interpretation. GEE did not incorporate incidence of tooth loss from 2007 to 2012; therefore, even accounting for autocorrelation, analysis were about prevalence. The fact that early life SEP (education) was associated with the outcome does not mean that it was associated with incidence of tooth loss in late life, as tooth loss could have happened in early life. This problem occurs in other publications with prevalence (see Peres et AJPH 2011 or Bernabe et all JCP 2011), as prevalence poses difficulties in disentangling early and late life effects.

9- In regard to the increase/decrease in the SEP gap from 2007 to 2012, results should be interpreted in light that only one coefficient was significant out of 24. Please, keep speculation about the significance of social network at minimum. You should also consider that, depending on how you dichotomized the outcome, you may get different trends (see Celeste, Nadanovsky, Fritzell, CDOE, 2011). Did authors performed sensibility analysis?

Minor Essential Revisions

Table 1: categories of “Tooth loss” are not clear. Does “All/almost” mean having all/almost teeth? The word “teeth” is in between the two lines.

Table 2: p-values are not clear. Do the represent comparison between year? categories of some variables? between countries?

Level of interest: An article of importance in its field

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.