Reviewer’s report

Title: Educational inequalities in mortality and associated risk factors: German vs. French Switzerland

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Reviewer: Rana Charafeddine

Reviewer’s report:

It is a high quality article with an interesting question, and appropriate data and methods. Below are few minor comments:

Minor Essential Revisions

Abstract:
What does “cultural inequality difference” means? It is not clear.

Background:
The background section lacks a description of the characteristics of the two regions. Why do the authors suspect different SES inequalities patterns? Is it because of a different policy structures? different income redistribution patterns (more egalitarian society)? different poverty and unemployment patterns?

Results:
P8 line 10: figure 1 (the figure should be numbered).

General:
There are some typing errors in the manuscript. For instance: larger and not lager (p. 12 line 15). Please revise.

Discretionary Revisions

Methods:
As it is well specified in this article, daily alcohol consumption may also be a protective factor. Is it possible to recode the alcohol consumption variable in order to reflect alcohol abuse rather than solely use of alcohol? For instance you use binge drinking.

The authors have opted not to use the RII. Yet in the limitations of the study they present as a potential source of bias the different educational systems within the country. So, isn’t the RII a good way to overcome these intra-country differences in the educational system?

Results:
In the figure, the authors state that inequalities appeared to decrease with age. But also, it is interesting to note that regional difference appear to subside with
Discussion:

P. 11, paragraph three, there is a discussion about the higher mortality rate from CHD mortality between FS and GS in women and how this may relate to different risk factors. However, the difference in mortality inequality in CHD is not statistically significant between the two region (p=0.160).

In the same paragraph, the sentence starting by “In accordance with our results” is not clear.

P. 14:

It would be interesting to expand on cultural differences in reporting bias for risk factors in the limitations.

General:

Sometimes, the writing style is confusing because the authors write in a comparative way without citing the group they are comparing with. As if it is assumed, but this is not clear all the time. For instance: Gradients in all cause-mortality were more pronounced in younger and middle aged men compared to? Here it is clear that it is older group, but still it needs to be mentioned. This is just one example.

Often, the authors compare SES inequalities between men and women. As the article is already rich, and the purpose is to compare between regions, it would be less confusing for the reader to reduce gender comparison to the necessary points solely.

**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 declare that I have no competing interests'