Reviewer's report

Title: Marginalisation and cardiovascular disease among rural Sami in Northern Norway: a population-based cross-sectional study

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Reviewer: Charlotte Jeppesen

Reviewer's report:

Comments to the manuscript: Marginalisation and cardiovascular disease among rural Sami in Northern Norway: a population-based cross-sectional study.

Major Compulsory Revisions
I find the article very interesting and it definitely has a novelty. It is difficult to collect this amount of data that this study comprises and I need to acknowledge that. The authors address their limitations well; nevertheless, I find it problematic that the authors do not include diet as a confounder when they refer to an article from the same study dealing with diet. This means that the data are available so I do not understand why it is not included. Furthermore, the manuscript has to be shortened substantially; especially the discussion art is very long.

Minor Essential Revisions

Abstract
I have one minor – hopefully helpful comment – which is regarding the punctuation: When it comes to writing the age span e.g. in the abstract in method part. It is not correct to write 25-79 years with a single hyphen. What you mean is that participants are from 35 to 79 years old. To write this you need the – (the dash, it is a bit longer than the hyphen): 35–79. Press Ctrl and minus at the same time and no space in between. This is the same as writing from 35 to 79 years old. The hyphen is commonly used to combine words, as you do correctly in your title (population-based, cross-sectional).

You write in method part in the abstract ‘questionnaire’, but you mean questionnaires? In the article you mention three questionnaires.

Methods
It is not clear to me what you have adjusted your analyses for. Please be more detailed in your description.

Sample: What do you mean with family background (ethnicity)? Is this based on parents or grandparents ethnicity?

Questionnaires: Please describe if your questionnaires were validated.

Page 9 regarding smoking. Was it only cigarette smoking? What kind of tobacco was/is used?

Will you please justify why you choose to use waist circumference and not BMI? It is fine to use waist circumference but you have to provide some kind of
argument. Is it because of SAMI anthropometry? When it comes to Inuit populations I would agree that waist circumference is the best measurement if you outcome is clinical. But this is due to shorter stature compared to other populations that BMI are normally used on. But I have no knowledge on Sami anthropology.

Statistical analyses: Needs a further elaboration and description. E.g. what covariates did you remove, what adjustments were done?

Results
See my comments in the 'table' section.

Page 12. For description of table 4. As written in the beneath part under table 4, it is not clear to me what confounders were finally included in the model.

You should include dietary factors if you have the data. Since you refer to a paper from the SAMINOR study, the data are available.... You write that you did not adjust for diet but you did not give a good reason for why not. Check dietary intake for confounding.

Discussion
Your discussion part is 9 pages! It is too long and has to be shortened substantially. I have therefore not commented specifically on this part since I assume the content will change after a shortening. Nevertheless, I have a few points for your consideration.

On page 18 you write that diet and other lifestyle factors might change as a result of acculturation. Could it be the other way around? Please, at least provide a reference for this statement.

You need to carefully revise the discussion so there is consensus e.g. you write that there was a substantial confounding with physical activity, but in the abstract and results you use the word ‘light’ and you do not show the data!

Tables.
For all tables Please provide N in all groups.
Table 1–3. Please justify why you split analyses on men and women. It is fine by me if you find sex differences, but you write under table 4 that you do not. So why are these tables stratified?
Could you insert a row in the tables where you write N for each group.

The p-value is for the difference between the four groups? If yes, I do not find this p-value very informative. I would recommend p-values for the difference between unexposed and exposed in the majority group and a p-value for the difference between unexposed and exposed in the minority group.

Table 4.
‘selected risk factors’ – you need to specify in the table (foot note) how these risk factors were selected).

Discretionary Revisions
Only for table 4.
You can exclude the p-values when you give the 95% CI. It is clear from the 95% CI if the point estimate is significant.
You do not need the foot note c. the 95% CI is given in the header in the table.
please provide the reference category with OR=1.
- Remember that tables have to be self-explanatory – In my opinion your tables cannot be interpreted alone without reading the text.
- Make a foot note describing adjustments for the ‘full model’. It is not clear from the statistical part or the results describing table 4 what was included in the fully adjusted model.

**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