Author's response to reviews

Title: Are time-trends of smoking among pregnant immigrant women in Sweden determined by cultural or socioeconomic factors?

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Author's response to reviews: see over
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Editor
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Dear Editor,

Enclosed, please find revised version of our manuscript “Are time-trends of smoking among pregnant immigrant women in Sweden determined by cultural or socioeconomic factors?”

The topic inequality in health has received increasing international attention and smoking has been described as one of the factors that contribute to health inequality. Likewise, smoking during pregnancy has been identified as exerting an independent adverse effect on a variety of reproductive health outcomes and the gap in socioeconomic differences in this regard remains as a public health challenge among immigrants and individuals in low socioeconomic groups in Sweden. Our main focus was to examine smoking during pregnancy and its relation with educational attainment in Sweden from 1982 to 2001 among immigrant women.

Overall, the prevalence of smoking among pregnant immigrant women decreased from 30.3% in 1982 to 11.0% in 2001, however with remarkable differences among educational levels and countries of origin. The highest absolute prevalence decline was recorded among low educated women (27.9%) and among women born in other Nordic countries (17.9%). The total attributable fraction of low and intermediate educational level increased over time from 55% to 62%. This type of information is valuable when discussing eventual trade-off in intervention benefits between the equity and the population perspective. This also could guide parts the future tobacco control policies related to immigrant population in Sweden.

We believe that our results will be an additional input to stimulate the discussion on the future direction of the tobacco control policy to improve health outcomes for both pregnant mothers and their children.

This study was made possible by grants from the Swedish Council for Working Life and Social Research, grant number FAS 2002-0920, and an ALF grant from the Medical Faculty of Lund University. We also received financial support from the ‘Tackling Socioeconomic Inequalities in Smoking’ project funded by European Commission, Public Health Directorate, through the European Network for Smoking Prevention (ENSP).

We affirm that due care has been taken to assure the integrity of the work, and equally affirm that no conflicts of interest exist. All authors have seen and given their approval to this final version of the manuscript.

Below are our answers to your questions:

The questions that are asked of authors are:
Financial competing interests
- In the past five years have you received reimbursements, fees, funding, or salary from an organization that may in any way gain or lose financially from the publication of this
manuscript, either now or in the future? Is such an organization financing this manuscript (including the article-processing charge)? If so, please specify.

Answer: no

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Answer: No

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Answer: No

- Do you have any other financial competing interests? If so, please specify.

Answer: No

Non-financial competing interests
Are there any non-financial competing interests (political, personal, religious, academic, ideological, intellectual, commercial or any other) to declare in relation to this manuscript? If so, please specify.

Answer: No

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The following are our responses to the comments given by the reviewers

Reviewer's report

Title: Are time-trends of smoking among pregnant immigrant women in Sweden determined by cultural or socioeconomic factors?

Reviewer: Federica Turati

This is an interesting manuscript showing time-trends of smoking among pregnant women, taking advantage from a uniquely large dataset of immigrant women in Sweden.

Data, results and conclusions are interesting; the manuscript is clear and well-written. Authors could further improve the present manuscript by considering the following minor comments:

1) Abstract, Results section: In my opinion, one of the main findings of the present paper is given by the huge overall decline in terms of smoking prevalence among immigrant pregnant women in 15 years, only. This should be further specified/considered both in the abstract and in the Results section. I strongly suggest therefore to include data on smoking prevalence, overall and by educational level and/or country of origin, at least for the first and the last period considered.

2) Abstract, Results section: The first sentence should be moved to the Conclusions section of the abstract. Please, delete, or move to the Conclusions section, the last line (“...demonstrating the strong effect of educational attainment”).

3) Material and Methods: Methods are practically identical to those by Moussa et al., 2009 (REF 2). Thus, a sentence (e.g., “Materials and Methods have already been described [2]”) at the beginning of this section is needed. Methods could
then be simplified.

The following sentence has been added at the beginning of the section (page 9) and “A similar analysis on the same data source has been described in detail elsewhere”

The text on this part has bee reduced substantially.

4) Material and Methods, Exposure variable: Please, list the name of the countries included in “other Nordic countries”.

This has been amended as suggested “a) Other Nordic countries (Denmark, Finland, Iceland and Norway)” on page 7.

5) Results: In order to avoid personal comments in the description of the findings, some of the sentences provided in this section should be moved to the Discussion section, including for example pag 10, last sentence of the first paragraph.

Here we do not agree to the view of the reviewer. The statement related to the last sentence on page 10 of first paragraph could be seen on figure 1 and this was not a personal comment.

6) Results, pag 10, 2nd paragraph: Please, besides ORs and 95% CIs for the first and last periods for “other Nordic countries, also report in the main text corresponding estimates for other countries of origin, in order to highlight that the strength of the relation between smoking during pregnancy and education increased during the study period in every class of country of origin.

According to the reviewer suggestion the following text has been inserted:

“During the period of 1982-2001, the crude ORs for smoking during pregnancy among women with low education from other European countries increased from 2.9 (2.4-3.6) to 4.0 (3.5-4.5) compared to their counterparts with high level of education. Furthermore, the crude ORs increased from 1.2 (1.6-2.8) to 3.4 (3.0-4.0) for women with low educational level from Non-European compared to those with high educational level”

7) Results: The interpretation of AF and sAF are reported twice in Material and Methods section (page 8) and in the Results section (page 10, 11).

This has now been changed as suggested. The overflow of text has been deleted.

8) Discussion: Add the appropriate reference (reference 2) at the end of the first sentence.

This has been corrected.
9) Discussion: Please, underline at the beginning of the Discussion section the huge decline in terms of smoking prevalence at fist antenatal visit among immigrant women (see point 1).

This has been amended as follows: “The main findings of our study indicate that there has been a noteworthy overall decline in smoking prevalence among pregnant immigrant women in Sweden during the period studied.”

10) Discussion: The pattern of smoking prevalence for pregnant women from “other Nordic countries (according to time-period and socio-economic level) is almost the same as that for Swedish pregnant women (Ref 2). This should at least be mentioned in the Discussion section.

The following text has been added “The pattern of widening socioeconomic gap in smoking during pregnancy among women from other Nordic countries has been shown to be similar to the trend observed among Swedish pregnant women.”

11) Discussion: In the whole manuscript, authors do not mention Swedish snus. Snus could have had a role on the declining of smoking prevalence among Swedish, as well as immigrant, pregnant women. Are there available data on use of snus among pregnant immigrant women? It would be interesting to understand whether the socio-economic inequalities of smoking trends observed in the present study may be due to different distributions of snus users among pregnant (immigrant) women.

The registration of snus use in Medical Birth Registry was first commenced in 1999. Consequently, we have information on snus use among pregnant women only for 3 years (1999-2001), which makes it difficult draw valuable conclusions. Additionally, the overall impact of Swedish snus in the decline of smoking prevalence among Swedish women is marginal. In our data (1999-2001) the prevalence of snus among women born in Sweden is 0.1% and 0% among immigrant pregnant women. Therefore, we decided not to mix these two issues, since the role of snus was insignificant for the decline of smoking prevalence both in the general female Swedish population and in the case of pregnant women in particular.

12) Discussion: Please, rephrase the last sentence of pag 13, 1st paragraph (‘If the development of pregnant immigrant women...cultural background), in order to simplify/clarify the interpretation of your results according to Berry’s process of acculturation.

This has been rephrased as follows: Interpreting the development of smoking prevalence among pregnant immigrant women according to Berry’s model indicate that our findings fit less with aspects of marginalization and isolation, but better with Berry’s description of assimilation and integration. Hence, the trend of smoking habits among immigrant women seems to be shaped by the same influences as those which have affected the whole population, (e.g. general Swedish tobacco prevention initiatives on women’s smoking). Thus, our findings strongly imply that the most important determinant of smoking trend among pregnant immigrant women in Sweden was associated with the level of education rather than women’s cultural background.
13) Table 2: please, clarify whether “n” represents the number of smokers or the total number of subjects according to calendar period end socio-economic characteristics. Moreover, specify that “%” represents smoking prevalence.

This has been corrected.

Moreover, the entire text should be carefully re-read by authors, for the presence of a few typos, including “county” instead of “country” in the Conclusions section of the Abstract, line 2.

This has been corrected

Rephrase moreover the first sentence of pag 14.

This has been corrected
Reviewer's report
Reviewer: Vincent Jaddoe
This study is very well analyzed and the results are clearly presented. The manuscript is well written and balanced. The main messages and conclusions are important.
I have only minor comments:
1) The authors should mention some limitations of this study, including the limited number of explanatory variables that were available due to use of a registry based dataset. What would information about other explanatory variables such as:
   - generation of immigrant
   - work
   - income
   - work
   add to their analyses.

   All immigrant pregnant women in our study are the first generation of immigrants and they are identified according the country of birth. As the reviewer indicated, we lack data on employment status and income. However, we believe that educational level as socioeconomic indicator answers our research question adequately. These limitations are mentioned in the last paragraphs of the discussion part of the paper.

2) Not smoking in early pregnancy, but continued smoking during pregnancy has important adverse effects on pregnancy outcomes. This should be mentioned in the discussion;

   We think that this point is difficult to consider in the discussion part of our study, due to that our point of departure was not to investigate adverse effects of smoking related to different periods of the pregnancy (smoking during early pregnancy vs. continued smoking). Our focus was to measure the impact of education. However we believe this idea is important to be considered in another paper since we have data on continued smoking during pregnancy.