Author's response to reviews

Title: Socio-demographic factors and processes associated with stages of change for smoking cessation in pregnant versus non-pregnant women.

Authors:

Alessandra Buja (alessandra.buja@unipd.it)
Emanuela Guarnieri (emanuelea.guarnieri@unipd.it)
Giovanni Forza (giovanni.forza@unipd.it)
Federica Tognazzo (federica.tognazzo@sanitapadova.it)
Alessandra Zampeiron (alessandra.zampeiron@unipd.it)

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Author's response to reviews: see over
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Editor-in-Chief

Melissa Norton, MD

Dear Editor,

I submit the revised paper for publication in "BMC Women's Health".

We address the comments in the revised manuscript and we provide a point-by-point response to the concerns.

About your comments we add a Authors’ contributions section and Acknowledgements; The article was copyedit by a professional service American Journal Experts; Approval for the study was obtained from the Unit's Director. Ethical approval from the Hospital Ethics Committee was not required because it is non needed in the research setting when the study has only descriptive and analytical porpoises. The ? was removed in the abstract.

Furthermore we respond to all reviewers comments’.

1. Reviewer: Monique Baha

Methods:
Were tobacco-related information (such as number of cigarettes smoked daily or level of dependence) collected during the interviews? For women who were ex-smokers, for how long had they been abstinent? Were these women spontaneous quitters or had they been offered smoking cessation counselling? If none of the above information were collected or if data were omitted on purpose, this is a limit which should be mentioned and discussed.

\textit{Ex-smokers are spontaneous, no intervention was offered to quitters. All subjected enrolled in the study was smoker one year before the pregnancy and one year before interviewer for non pregnant. We collected the number cigarettes smoked actually for current smokers and the number of cigarettes smoked one year before both for smokers and ex-smokers. We add this data in the results. We know how many ex smoker are abstinent more than 6 moths and less than 6 month, that is the proportion of patient of in action and maintenance stages.}

Results:
In the paragraph on stages of change: adding information for instance on the duration of abstinence (if available) would complement the profile of pregnant ex-smokers who maintained abstinence. Information on the level of dependence or the number of cigarettes smoked would help better describe women who are pre-contemplative.

\textit{I add the information in the manuscript of the number of cigarettes, unfortunately we have no information about dependence.}

In the methods, last sentence in the paragraph “design”, the authors describe the acceptability of smoking questionnaire as a measure of women’s perception of the acceptability of smoking in different groups. Unfortunately, detailed results are not presented. It would be interesting to discuss whether pregnant smokers view their own smoking as more (or less) acceptable than others’.
We add in the manuscript detailed information in a table [table4] of global score of acceptability questionnaire. Particularly the results of item 4 are shown here:

Mean score of acceptability towards herself as smoker

<table>
<thead>
<tr>
<th></th>
<th>not pregnant</th>
<th>pregnant</th>
</tr>
</thead>
<tbody>
<tr>
<td>stage 1</td>
<td>3.1</td>
<td>2.4</td>
</tr>
<tr>
<td>stage 2</td>
<td>2.1</td>
<td>1.6</td>
</tr>
<tr>
<td>stage 3</td>
<td>1.5</td>
<td>1.9</td>
</tr>
<tr>
<td>stage 4</td>
<td>1.3</td>
<td>1.8</td>
</tr>
<tr>
<td>stage 5</td>
<td>1.3</td>
<td>1.4</td>
</tr>
</tbody>
</table>

The pregnant women in pre-contemplative and contemplative stage view herself less acceptable than pregnant women instead in the advanced stage the score is higher in pregnant women.

Discussion:
I’m afraid that the socio-demographic profile of pregnant smokers is a well documented result (see for example, Schneider et al. The European Journal of Contraception & Reproductive Health Care 2008, or Ebert and Fahy Women and Birth 2007). Authors should acknowledge that and present their findings in a way which clearly shows what this study adds to the body of knowledge, instead of simply confirming existing results.

In my opinion, key findings of this study are: the scores of experiential and behavioural processes between stages of change by group of women, scores on the situational temptation measure, and the acceptability of smoking between stages of change by group of women.

We add a sentence at the start of the discussion about the key finding of our paper. Thank you for the suggestion.

Conclusion:
Results from this study should allow the authors to draw conclusions with more relevant implications for smoking cessation interventions during pregnancy: for instance, the importance of evaluating the social situations and craving situations that women face, especially at earlier stages of change. Authors could also mention that future interventions should focus on the inability of pregnant smokers to apply behavioural coping mechanisms by themselves.

We stressed these concepts in conclusion.

Abstract:
Results on the acceptability of smoking should be mentioned in the results section. The conclusion presented here may not be the most accurate considering that findings in terms of social situations or social acceptability of smoking reveal similarities between pregnant and non-pregnant women.

We rephrase the abstract results and conclusion.

Minor Essential Revisions

Methods:
In the paragraph on sample: Would the authors mind explaining what they mean by “healthy” women? Does it mean for instance that women suffering cardiovascular or respiratory diseases were not included?
It is correct, we add in methods

Discussion:
In the second paragraph please rephrase “education confers wisdom regarding health”.
Done

Tables:
It seems information presented in table 1 is redundant with the figures.
Table 1 shows statistical difference between stage and figures show the statistical difference among two women groups. We believe these were the main findings and it could be important a figure.

References:
Reference (30) is listed in the references section but not mentioned in the text.
We introduce the reference in the text.
Reviewer: Ross Barnett

1. The study fails to adequately situate the work in the wider context of women’s smoking and smoking among pregnant women in particular. I would have preferred to have seen a brief review of the literature on pregnant and non-pregnant smokers and what particular gap in the research this study attempts to fill. *We introduce about this issue some periods in introduction.*

2. I would also have liked to have seen some discussion of the importance of individual versus environmental causes of smoking and the failure of much smoking cessation policy to address the latter. The abstract mentions the importance of “social contextual factors”, but these are not really discussed in the conclusion. Much smoking cessation policy has failed precisely because it has tended to focus on individual behaviour change and less on the critical environmental factors which also affect perceptions of risk. Even pregnant women may continue to smoke in some social environments if the perceived risks of doing so are less than the other risks they may experience in their day to day lives. *We add some sentences in the conclusion about this issue.*

3. The study design also needs further elaboration:
   a. I would have liked to have seen more information on the social composition of the two samples and how they were chosen. Telling me that “about 85%” of the women in both groups had a high school education is not that helpful. *We add all information regarding social composition of sample in table 1*
   b. The familiar TTM is introduced but again telling me that the questionnaire included both experiential and behavioural process as components of the stage of change model would have been more useful had the design been more clearly related to a theoretical framework or some stated hypotheses. Similarly throughout the paper too many issues are just “dropped in” without adequate explanation eg like the ‘three types of situations’ and ‘precocious stages’ (p. 7). The Situational Temptation Measure should have been discussed in more detail in the methods section and again should have been more clearly related to particular study objectives. *We rephrase objectives of the study in introduction and in methods we enlarge the explanation about Situational Temptation Measure.*

4. The Discussion section provides a useful summary of the findings but it fails to:
   a. Acknowledge the limitations of the study *We add the main limit of this study*
   b. Demonstrate what contribution the study has made to the wider literature eg I would have liked to have seen some discussion of why educational factors were only important among pregnant smokers, whereas the wider literature on smoking inequality would suggest that socio-economic status, however measured, is a very good predictor of smoking cessation for both women and men.

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**The figure report the official data of smoke among different education levels in Region Veneto in both sexes. In this region seem that higher is the level of education higher is the probability of the smoke in women. In our data the proportion of less educated in not pregnant was higher in pre-contemplative than in latter stage of change but it is not significant. Another publication, that regards the behaviour toward smoke only for women, fail to find any association between smoke and level education. We add this paper in the discussion.**

Reviewer: David Tappin
The introduction must focus on the review of smoking cessation interventions during pregnancy and the lack of efficacy of stage of change interventions. It must contrast this with any evidence about stage of change interventions outside pregnancy.

We explain in the introduction the different efficacy of TTM intervention in pregnant vs not pregnant women.

**Reviewer: Cheryl Merzel**

The research question posed at the end of the Introduction is rather vague and general. Sharpen the research question to clarify what specifically needs to be compared between pregnant and non-pregnant women. Clarify the specific outcome behaviour that will be examined for the stage of change model being applied.

*The research question was revised*

The sample seems to be extremely limited and selective. The authors should describe in much more detail the sampling methods employed and the population that the sample represents. Every effort should be made to use more representative sampling methods for this study.

*We note in methods that women were consecutively enrolled in the survey and were drawn from the same catchment area in the same period.*

Clarify if the study was limited to current smokers and ex smokers (i.e., are women who never smoked excluded?

*Women never smokers or ex smokers quitting more than one year were excluded from the study.*

The authors should explain how they dealt with the potential bias from self reported smoking status. Did they validate these reports? This is critical since there is a strong likelihood that current smoking would not be admitted to by the women.

*Thank you for this observation. it is the major limit of our survey study based on self-reported information and not based on physical measurements. We add a sentence in discussion related to this issue*

Identify the specific measures used to identify smoking status. Identify how each stage of change was measured (i.e., the wording of the questions).

*We add in the method that we ask the short form of Prochaska questionnaire and the additional questions: All sample subjects (current smoker and ex smoker) were asked about the age of initiation of smoking and the number of cigarettes smoked one year before, furthermore current smokers were asked the number of cigarettes actually smoked.*

The study would be strengthened by including measures of the degree of smoking – e.g., frequency, amount, level of dependency.

*We add information in the results about amount cigarettes in ex smoker and current smokers by groups*

Provide some indication as to how these characteristics compare to the general target population.

**Tasso di occupazione per classe di età. Veneto e province - Media 2007 (valori percentuali)**

<table>
<thead>
<tr>
<th>PROVINCIA</th>
<th>15 - 24 anni</th>
<th>25 - 34 anni</th>
<th>35 - 44 anni</th>
<th>45 - 54 anni</th>
<th>55 anni e oltre</th>
<th>15 - 64 anni</th>
<th>Totale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verona</td>
<td>38,2</td>
<td>81,5</td>
<td>84,3</td>
<td>77,6</td>
<td>16,2</td>
<td>66,9</td>
<td>53,3</td>
</tr>
<tr>
<td>Vicenza</td>
<td>35,6</td>
<td>83,7</td>
<td>84,9</td>
<td>76,3</td>
<td>14,1</td>
<td>65,6</td>
<td>52,8</td>
</tr>
<tr>
<td>Belluno</td>
<td>34,4</td>
<td>86,7</td>
<td>89,9</td>
<td>87,4</td>
<td>11,2</td>
<td>67,8</td>
<td>51,5</td>
</tr>
<tr>
<td>Treviso</td>
<td>34,4</td>
<td>82</td>
<td>86,2</td>
<td>76,5</td>
<td>15,6</td>
<td>67,5</td>
<td>54,1</td>
</tr>
<tr>
<td>Venezia</td>
<td>28,2</td>
<td>78,3</td>
<td>79,3</td>
<td>80,6</td>
<td>12,7</td>
<td>62,7</td>
<td>48,3</td>
</tr>
<tr>
<td>Padova</td>
<td>36,8</td>
<td>82,3</td>
<td>83,5</td>
<td>77</td>
<td>15</td>
<td>65,9</td>
<td>52,6</td>
</tr>
<tr>
<td>Rovigo</td>
<td>35,2</td>
<td>78,3</td>
<td>86,9</td>
<td>77,8</td>
<td>11,7</td>
<td>64,5</td>
<td>49</td>
</tr>
<tr>
<td>Veneto</td>
<td>34,8</td>
<td>81,7</td>
<td>84</td>
<td>78</td>
<td>14,3</td>
<td>65,8</td>
<td>52</td>
</tr>
</tbody>
</table>

*This table is the official statistics data of our region of employed population. In the age classes considered the employment is near our data. There is not official data by sex.*

*In our LHU (local health unit) the strangers is near 10%, and for all age classes women are 46% married, 3% divorced, 12% widow, and 38% bachelor.*

Provide the frequency distributions for smoking status among pregnant and non pregnant women. Show how these compare to national or regional data.

*Because we excluded from the study not smoker I cannot calculate a prevalence of smoke in groups.*
Stages of Change – clarify how the statistical test was conducted – percentages for each stage are presented but an overall significance level is given. Were statistical comparisons made within each stage?

The statistical comparison was applied to all frequencies distribution in two groups. It was applied the chi-squared test as described in methods for qualitative variable. We add a table to be more clear.

Stages of Change - Clarify how stages of change, presumably for quitting smoking, applies to ex-smokers.

“Are you currently a smoker?

- Yes, I currently smoke
- No, I quit within the last 6 months (ACTION STAGE)
- No, I quit more than 6 months ago (MAINTENANCE STAGE)
- No, I have never smoked (NONSMOKER)”

The first question of Prochaska questionnaire establishes the difference between current smoker, no smoker and ex-smoker and Ex-smoker were subdivided in two stages of change: in action (those who quit within the last 6 months) and in maintenance (those who quit more than 6 months ago).

11. Results, Stages of Change - The authors combine smokers and ex-smokers in their reports; they are very different groups and should be analyzed separately. This is particularly important since smoking behaviours differ among pregnant and non-pregnant women. In this survey about women sure smokers one year before the interview, we want define how the distribution in stage of change (ex smokers were in action and in maintenance) was in these women by group (actually pregnant not pregnant). We evidenced in the group of pregnant women there were more ex smokers, probably due to pregnancy that is a great stimulus stopping smoke.

12. Results – explain the importance of examining the relationship of stages of change and sociodemographic characteristics.

Another question of this survey was to evidenced if the stages of change (became ex smoker or more prompt to smoke) are associated with external factors that can be addictive protective factors by group. In this study we evidenced that social factors are important in pregnant women probably because the social pressure is more strong during pregnancy.

13. Results, Processes of Change – the definition and meaning of “experiential, behavioural processes” should be explained. The measures for these variables should be described in the methods section.

We add a sentence in method about the meaning of behavioural and experiential processes. The Brief Version of the Processes of Change Questionnaire derived by the TTM of change of Prochaska et al. (as pointed in method section) was used to measure experiential and behavioural processes

14. Results, Processes of Change, Temptation to Smoke – clarify if these analyses are limited to current smokers (it seems they must be but throughout the analysis it is not clear whether both current and ex-smokers are included and if the analysis is limited to current smokers; this should be clarified).

See answer to 11.

15. Results, Processes of Change – The analysis makes within group comparisons but no direct comparisons between pregnant and non pregnant. The difference between pregnant and non pregnant women in stages of change should be analyzed directly.

The comparison of pregnant and non-pregnant women were reported in figure 1

16. Discussion – clarify whether the interpretation of the stages of change findings is based on findings limited to current smokers. It’s hard to interpret the findings when the relationship of stage of change to smoking status has not been clarified and controlled for in the analysis.
See answer to 11.

17. Discussion – The authors infer differences in processes of change between pregnant and non pregnant women but the analysis does not seem to be based on direct comparison of these two groups (see #15 above).

The comparison of pregnant and non-pregnant women were reported in figure 1

18. Tables – The tables are difficult to follow. Clarify how processes are measured/quantified. Clarify what the number in each cell is based on.

The Brief Version of the Processes of Change Questionnaire derived by the TTM of change of Prochaska et al. (as pointed in method section) was used to measure experiential and behavioural processes. It is a Likert scale questionnaire.

Minor Essential Revisions

1. Abstract, Methods - Delete question mark at end of the sentence.

Done

2. Methods section, 4th sentence – delete the extra period at the end of the sentence.

Done

3. Methods, Analysis – in the second sentence, change the word “qualitative” to “categorical.”

Done

4. Figures and Tables – identify the statistical tests employed. Clarify if the significance levels refer to within group or between group differences. Indicate if the cells in the tables are based on percentages or if they are a mean (if so, include standard deviations).

We modify the tables adding the name of the test employed and the description of stats showed in the cells.

I hope the paper is now suitable for publication.

Sincerely
Alessandra Buja