Reviewer's report

Title: Epidemiology of smoking during pregnancy among Canadian women: A national survey

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Reviewer: Luc van Lonkhuijzen

Reviewer's report:

The authors have done an excellent job in getting interview data from a large number of women.
However I have 3 major concerns:
The methods description is insufficient.
The modeling strategy used is inappropriate
The authors must provide more meaning to the data the report.

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)
1 Title and Abstract: “prevalence of smoking during pregnancy and associated risk factors…..” might more clearly cover the content of this research.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

-Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

2 The authors mention “bootstrapping and the complex sampling design”. The sampling design needs to be described in more detail. On what basis were the 8542 women selected and on what basis were they reduced to 8244. What selection process was used. Why did some of the people not respond, did they not answer their phone? How often were they contacted? Is anything known about their characteristics?

3 readers might benefit from some explanation with regard to bootstrapping. Why is it use and what assumptions were necessary

4 page 6 “prevalence was estimated through population weights” needs explanation. Describe process in more detail.

5 Please provide the method for the way the number of cigarettes smoked was established. (authors might consider supplying all questions in an appendix)

6 Chi square test were performed for categorical variables, what p value was considered significant? Are these results presented, if not please do so or remove statement?
Stress is measured as a level based on the number of yes answers to a set of 13 questions. In the table and in the discussion stress is described as the number of stressful events. Is this the same number. Does every question asks for a specific stressful event? Please explain.

Variables to include in the multivariate analysis were selected on the basis of their significance in the univariate analysis. This forward stepwise modeling is inappropriate. For instance if prenatal care is related to smoking as suggested in other studies (reference 25 and 26) the number of prenatal visits should be included in the multivariate model even if it is not significant at the univariate analysis. (It is unclear from the test what the difference is between prenatal visits and antenatal classes reported in the table and prenatal care as mentioned in the discussion, please explain the difference)

Discussion and Conclusion

The discussion compare their findings of the study to a number of different Canadian studies. But they do not provide enough meaning to the differences they find. This article would be more interesting if such meaning is provided especially since most of the findings concur with the previous studies that are reported. A few questions that might help provide meaning are:

9.1 Please explain what could be a reasons for the observed decline in smoking during pregnancy, outside differences in study design, as these reasons may be important clues on what interventions might be most effective from a public health perspective.
9.2 Is this trend of reduced smoking during pregnancy also reflected in a reduced rate in the general not pregnant population
9.3 The authors conclude that preventive measures should focus on teenage girls of low economic status. But how big is this group in the total population. Will it lead to a large reduction in the 10% of women smoking. Are there alternative strategies that may be more effective. For instance only 1/3 of women are attending antenatal classes. If this attendance is improved may that lead to a reduction of smoking?
9.4 If stress is related to smoking are there ways to reduce stress and will these be effective in reducing smoking?
9.5 If smoking during pregnancy in the northern territories is 40% should efforts not better be directed towards this province. And what is the reason for this large proportion that is found in this and other studies.

The discussion would benefit from more precise advice on how to use the findings in this study to further reduce smoking during pregnancy.

Conclusion page 14. The conclusion that smoking rate has dropped is not supported by the data. The authors themselves point out that the differences in smoking rates can also be derived from differences in study design etc. They can only conclude that their rate is lower as compared to previous reports.
12 The data presented in both the results and the quoted literature do not discuss smoking prevention programs and integrated health promotion strategies as effective tools to further reduce smoking in pregnancy. Please base your conclusion on the results and the conclusion.

13 On page 12 a p-value is supplied with the statement that smokers were more like to quit if they were not living with smokers. Does this means that the other percentages mentioned in the discussion or not significant. Or is it very unusual to find this p-value. Please explain and provide us with the actual numbers if the p-value is to be maintained in the text.

Limitations:

14 page 13 “the study rates are suggested to be underestimated”. Suggested by whom. Please explain

15 Can you provide an estimation about the size of the underestimation due to the bias introduced by self reporting of sensitive variables

References:

16 Authors start with a general statement of smoking being worldwide the most important preventable risk factor. They do supply a reference with this statement But judging from the title this article deals with smoking behaviour in Japanese women. Is their general statement based on this study or do the quote Maeno quoting somebody else. If so please provide us with the original source of this important first statement.

Abstract

17 The authors choose to report OR only for attending prenatal class and experiencing stressfull events, please remove OR from abstract or provide OR for all outcomes. For the stressfull event OR see my comment before, secondly different numbers are used both in abstract and results.

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: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests