Reviewer’s report

Title: Active and passive maternal smoking during pregnancy and birth outcomes: the Kyushu Okinawa Maternal and Child Health Study

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Reviewer: Anastasia Iliadou

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This study elucidates the effects of active and passive smoking during pregnancy on prenatal outcomes such as birth weight, preterm birth and small for gestational age (SGA). The nice aspects of the study is that they have information about smoking habits at all three trimester of the pregnancy as well as reports of passive smoking.

Here are my comments:

Major Compulsory Revisions

1. Throughout the text the authors use the term “westernized countries”, “in the West”. I find it a bit awkward since many countries in the “east” are developed and have been developed enough for the past 20-30 years. So I suggest that they change the wording to developed countries.

2. In page 4, 2nd paragraph, line 7 they mention that “quitting maternal smoking I early pregnancy was not found to affect the risk for LBW, preterm or SGA”. I suggest that they scan the literature better since I found one study for example where pregnant smokers who quit in the first trimester lowered their risk of delivering preterm and SGA newborns to a level similar to that of pregnant nonsmokers (Polakowski LL et al Obstet Gynecol. 2009).

3. Maybe this is just my misunderstanding but in the methods section you report that the seven prefectures on Kyushu and Okinawa have a total population of 1.37 million. But the largest of the seven prefectures had a total population of 5.04 million and then further down the six prefectures except Fukuoka have a total population of 8.22 million. Maybe as I mentioned I might have misunderstood but a clearer description would help the reader a lot.

4. In page 6, last paragraph you mention that gestational age is either estimated through ultrasound or first day of last menstrual period. Do you know how many were estimated from each method? I would suspect that all of them would have been estimated by ultrasound.

5. Page 7 statistical analysis. You mention that the categories of smoking were, smoking during 1st trimester, smoking during 2nd or 3rd and smoking through the whole pregnancy. What about the category smoking during 1st and 2nd trimester? Did you not have any women who fell into that category? And are these categorizations based only on the questionnaire that was administered after delivery or did you create some kind of algorithm to combine answers from both questionnaires?
6. Page 9, results. This is a bit related to my previous comment. I believe that it is a bit difficult to understand the trend analyses. Is it considered worse to smoke only on the first trimester compared to 2nd and 3rd or vice versa? I think it would make more sense to categorise smoking as 1) smoked during 1st trimester, 2) smoked during 1st and 2nd, 3) smoked during 2nd and 3rd, 4) smoked during whole pregnancy. Then we can have test of trend as things either worsen or get better.

7. Page 11, discussion, first paragraph, 2nd row."…while smoking until conception but quitting after conception..” I think the phrase “but quitting after conception” is unnecessary to mention since smoking until conceptions implies they didn’t smoke after.

8. General comment about discussion. Although the authors refer to many studies, they seem to merely report on the results from different studies and end the paragraphs by stating “our results are in partial agreement with previous studies”. Although these are the facts, it would be nice to have a more thorough discussion of how their results relate to other studies and why they find different results or opposing results compared to other studies.

9. You only have self-reports on smoking as you state in discussion, and you dismiss this with a reference from Pickett stating that a previous validation with urine samples have shown good overall agreement. However, Pickett also stated in his paper that there is considerable variation within women reports and the correlations with urine samples were low. What are the implications in your study looking at different trimesters? What about recall bias?

10. Page 12, last paragraph. You mention in your limitations that you didn’t have a representative sample of the population and perhaps you captured the more educated ones. What are the implications on your results?

11. Page 13 conclusion. I think it is expected that the most obvious and morally correct conclusions is to state that pregnant women should stop smoking. I believe though that a more valid conclusion in your study is that replication is definitely needed and in a more representative sample of the Japanese population.

Minor Essential Revisions

12. Lastly in your tables you have a column that you refer to as risk (%). Please report these rates in a homogeneous manner. I would rather call them rates or frequencies and make sure they are presented the same way in all tables. Right now in Table 3 you have given the actual rates and frequencies in parenthesis, but you do not do that in the rest of the Tables.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable
Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

No competing interests