Reviewer's report

Title: Current parental tobacco use is associated with higher Body Mass Index in children and adolescents: an international cross-sectional study

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Reviewer: Amy Taylor

Reviewer's report:

This paper looks at the association between parental smoking and offspring BMI during childhood and adolescence, using data from a large international cross sectional survey. They find evidence for positive associations between parental smoking and offspring BMI, which is a pattern consistent with much of the reported literature. This paper does not really add anything in terms of determining causality, but is perhaps of interest in describing this pattern across a number of different countries. However, I am not sure that the authors have made the best use of these data to do this.

Major compulsory revisions

1. Given the diverse range of countries included in this analysis, it seems odd to combine the estimates, without investigating whether there is evidence for heterogeneity between the associations in different countries. It would appear from the figures that there is quite a bit of heterogeneity. Therefore I am not entirely convinced by the validity of the combined estimates presented in Tables 1 and 2. The authors state that “many of the centres were from middle and low income countries from which data on the associations between parental smoking and BMI have not been previously reported”. However, the way the data are presented makes it difficult to compare estimates between different countries. Could the authors perform the analyses separately by centre and then combine in a meta-analysis?

2. Comparing associations from different countries could actually be informative with regards to causality. It is likely that confounding structures will differ between countries – e.g. smoking may be associated with high socioeconomic status in some countries but low socioeconomic status in others. Therefore if an association is consistently seen across countries, it provides stronger evidence for causality. See http://www.ncbi.nlm.nih.gov/pubmed/20587678 for an example of this. It would also be interesting to see if there is an interaction with GNI.

3. I don’t think that Figure 1 is very informative. I would prefer to see a forest plot with beta coefficients and 95% confidence intervals for each centre.

4. It would be useful to have some basic characteristics of the contributing centres in supplementary material- e.g. N for each centre, country, GNI, %females

Minor Essential Revisions
1. It would be good to have 95% confidence intervals presented in the tables and text rather than standard errors.

2. In table 1, the footnote refers to estimated BMIs for boys but I assume this should be “children”.

Discretionary Revisions
5. Were data on any other potential confounders (apart from fast food consumption) of this association available?

Level of interest: An article of limited interest

Quality of written English: Acceptable

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