Reviewer’s report

Title: Factors associated with secondhand smoke incursion into the homes of non-smoking residents in a multi-unit housing complex: a cross-sectional study in Seoul, Korea

Version: 0 Date: 22 May 2017

Reviewer: Jennifer Ibrahim

Reviewer's report:

The authors set out to examine the prevalence of exposure to secondhand smoke (SHS) in multi-unit housing (MUH) among a sample of residents in Seoul, Korea. The authors present data on SHS exposure in MUH from other countries and notes that they do not have an estimate of exposure in Korea. While I have some questions regarding methodology, the biggest concern is the take-away message? What have we learned and is this something that is actionable? Can residents or policymakers do something with this information? The discussion notes that there was over-representation of smokers which seems to bias the entire analysis. While this is noted as a limitation, this seems more than just a limitation. My specific comments are as follows:

- p.1 line 15 - Was the sample of 2600 from one area or from across the city of Seoul?
- p.1 line 25 - Is it that nobody smoked indoors or they had a policy that nobody was allowed to smoke indoors?
- p.1 line 32 - Is it that residents experienced SHS exposure once or could be multiple times?
- p.2 first paragraph - Why talk about prevalence in US as a starting point for the paper? All of the US information was confusing. Some information on SHS exposure in multiple countries could make sense, but focusing on US and with old data (2006) did not make sense.
- p.2 paragraph 3 - Are there are other countries like Korea that have measured SHS exposure that you could add?
- p.3 Sample - Is there more recent data than 2015 to show that the findings are still consistent?
- p.3 Sample - Can you include a flowchart showing the inclusion criteria and the breakdown for getting to the final sample?
- p.4 The description of the variables could be shortened and the measures shown in table with the findings. The savings in words could be used for findings and discussion.
- p.5 Any concerns over recall bias with a 12 month window for potential exposure?
- p.5 How did the authors define the categories? How reliable is the measure as opposed to something like never, monthly, weekly, daily or even just never, sometimes, daily?

- p.7 Did you look at any correlations between the variables? I wonder if there is collinearity between time in home and children - there may be a caretaker who is at home because of children?

- p.7 When showing the % for all data, can you also show (#)?

- p.8 When reporting SHS exposure, is this really exposure or is it awareness of SHS in the area? I understand that testing cotinine levels is not in the scope of this study, but the difference should be acknowledged.

- p.9 The discussion starts out rocky by pointing out the smoking prevalence in the sample was 25.25% which is higher than the city prevalence which was 20.6%. The authors offer an explanation of age distribution, but that was not sufficient. We know (in the US) that there is a strong association between lower income and smoking, so is that true in Seoul too and what is the income distribution in MUH? It was just a tough way to start the discussion with this inconsistency.

- p.10 paragraph 1 - The line that "smokers were less likely to report SHS incursion" is odd. They are smokers so they are exposing themselves. Perhaps it was the wording, but this was awkward.

- p.10 I don't understand the comparisons to the US. It seems like there are social and cultural differences and this may not be the best comparison. Can explain or describe so as to dismiss this question for the reader?

- p.10 lines 42-45 "The high prevalence of SHS incursion in the present study might be due to the high smoking rate in the study population which might be associated with the higher prevalence of SHS incursion in Korea than in the USA." This is circular and confusing.

- p.11 There are several spots in the discussion that sound more like results than discussion points - authors should check this and edit as necessary.

- p.13 Even in the conclusion, I am not clear on the value of what was learned from the study. I was left with more questions about exposure and opportunities for action. I was also taken by the lack of any type of cultural considerations when making comparisons between US and Korea. The conclusion almost read as if it was incomplete.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes
Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

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