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

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Reviewer: Frances Stillman

Reviewer's report:

This is a very interesting and well-written research study that looked at SHS incursion into apartments and attached homes (MUH) in Seoul Korea.

This is a descriptive study to document the occurrence of this incursion into homes and to look at socio-demographic factors as well as built environmental factors associated with this incursion. The inclusion of the built environmental factors is very important to help understand what is actually happening.

Page 4, line 31: "there has been a limited implementation of similar regulations in personal living space." I would mention that it is difficult to pass legislation to restrict smoking in a private home. Could mention work to make public housing smoke-free in US as an example of doing this. There is also literature about working with families of children to remove smoker from the house which could be related to object of this study.

Page 5, line 1-11: "to best of our knowledge......"

Did find some information about MUH and built environment and regulation. Seems Canada has done work in this area: http://www.nsra-adnf.ca/cms/page1433.cfm (http://www.nsra-adnf.ca/cms/index.cfm?group_id=1471) and Canadian Case Law on Drifting Second-hand Smoke in Multi-Unit Dwellings. Check this out since may provide some useful information.

Page 5, line 53: What was the selection criteria for the 11,788 people selected for the study?

Page 6, line 8. What exactly was the sampling regime? How was the randomization done?

Page 6, 46-51: "living in home with a personal smoke-free rule......."

How was the determination made concerning presence of a rule. Was it based on a specific question or just that the household indicated no one smokes in the home. Could you please explain this? Was there a specific question about actually having a defined home smoking policy? Or was this assumed that there was such a rule if indicated no one smoked at home. At issue is the fact that a home smoking policy / rule would require a willful action. No one smoking in home could be that they are non-smokers and all friends and family are non-smokers so no one smokes in home- a passive action.
Page 7, line 36-53. I think these factors are interesting and important. Is there any literature that you could cite to indicate that these have been studied in some fashion and are important for inclusion?

Page 12, line 9-19: "Smokers were less likely to report SHS incursion. This might......."

"Non-smokers might...... I think there should be some literature to cite that demonstrates that smokers are less sensitive to SHS than non-smokers so you could make this statement read more confirmatory instead of tentative.

Page 13, line 26-31: I think you need a bit more of a statement then, "The results suggest that limitations should be placed on smoking in these locations. " While that is a good idea, the implementation of this is difficult and requires some thought and suggestions on how. There are studies on public housing and seems that Canada has done some work on this. I think a bit more work on this for this paper is necessary.

**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.

Unable to assess

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

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
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I am able to assess the statistics

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