Author's response to reviews

Title: Correlates of exposure to secondhand smoke (SHS) at home among non-smoking adults in Bangladesh: Findings from the ITC Bangladesh Survey

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Author's response to reviews: see over
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The Editor
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Dear Editor,

MS: 2375074671213199
Correlates of exposure to tobacco smoke pollution (TSP) among non-smoking adults in Bangladesh: Findings from the ITC Bangladesh Survey

Thank you so much for your letter of April 22, 2014 and your willingness to reconsider the above manuscript. We have addressed all the comments made by the reviewers and provided a point-by-point response below. All the changes are incorporated in the text.

Please feel free to contact me at Tel: 617-638 7547: E-mail: Abu.Abdullah@BMC.Org or (asm.abdullah@graduate.hku.hk), if you have any queries.

Yours sincerely,

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Abu S Abdullah
(Corresponding author)
Responses to reviewers

Reviewer#1

The article explores correlates of exposure to secondhand smoke exposure in the home in order to inform tobacco control efforts in Bangladesh. It is well-written and methods are adequate. While only limited scientific knowledge is gained with this article, it provides important public health implications. I have a few comments and recommendations for clarification.

Comment 1:
Major compulsory revisions.
The construction of the exposure variable is described in para. 3 on p. 7. Non-smokers who reported having a complete home smoking ban were classified as ‘not exposed to TSP’. Non-smokers who reported having no home smoking ban and who shared a household with at least one smoker were classified as ‘exposed to TSP’. Now I’m wondering how those non-smokers were classified, who reported having no home smoking ban but do not share a household with a smoker (either because they live in a non-smoking household or because they live alone)? They could still be exposed to substantial amounts of TSP at home.

Response 1:
While we recognize the limitations of the exposure variable, given the nature of the ITC survey, and given that no objective measures of TSP were employed during data collection, this measure still provides an indication of the possible exposure to TSP among non-smokers in Bangladesh. In other words, for a respondent to be classified as “not exposed” to TSP, there had to be a definite report of a complete smoking ban in the home and these reports had to be consistent among all respondents interviewed in that home. Inconsistencies in reports or if respondents did not explicitly state that smoking is completely banned in their homes resulted in a classification of “exposed” to TSP.

The ITC Bangladesh survey is a nationally representative survey and therefore our estimates illustrate the extent of the TSP exposure problem in Bangladesh. Furthermore, if our measure under-estimates exposure, which might well be the case, our estimates indicate that, at the very least, 43% of non-smoking Bangladeshi adults might potentially exposed to TSP in their homes, a substantial proportion of adults. In other words, these estimates indicate that exposure to TSP in the home is a problem, and if this is an under-estimate, our conclusions wouldn’t change.

The majority of non-smokers from non-smoking homes were almost always the only person interviewed in that home. This is by design; according to the sampling protocol, 3 non-smoking households were selected for every 10 smoking households. Moreover, only one randomly selected non-smoking adult was chosen from non-smoking households to participate (the same is true for non-smokers in smoking homes, unless there was only one non-smoker, in which case that person was selected to be interviewed). In the analysis presented here, 404 non-smokers were interviewed from 389 non-smoking households. The vast majority of these non-smokers (n = 375 or 93%) were the only person interviewed in that household. (Multiple non-smokers could
have been interviewed if a smoker interviewed in wave 1 had quit by wave 2). Since multiple reports of home smoking bans are not available for these 375 non-smokers, it is possible that TSP exposure is under-estimated.

Therefore, our measure better reflects the potential for exposure. If respondents did not have a complete home smoking ban, then the potential for exposure exists.

We have now included this exposure-related issue as a limitation in the revised manuscript.

Comment 2:
I am generally somewhat concerned with regards to the exposure variable, as it seems to be a mixture of self-reported home smoking rules and of household composition with regards to smoking status. It might be better to either choose one consistent concept, or – if a combination of both concepts is used – to additionally distinguish between more categories in the descriptive analyses (e.g. no home smoking ban + living with a smoker; no home smoking ban + living with non-smokers; no home smoking ban + living alone; home smoking ban). Anyways, the limitations of the current measure for exposure to TSP should be mentioned in the discussion (para. 3 on p. 13). In contrast to what is written in the discussion (“TSP exposure was measured by self-report”) TSP exposure is actually not even self-reported, but a proxy measure constructed from self-reported home smoking rules and household composition, and might thus not always reflect real exposure to TSP at home. In addition, this measure does not provide information about dimensions of exposure such as frequency and intensity.

Response 2:
Thank you so much. Our focus was to describe the exposure to TSP at home. We have now made this clear in the title and abstract of the paper. Also, we have now included the TSP measurement issue as a limitation in the paper.

Comment 3:
It is also not always clearly stated in the text that TSP exposure at home is the particular measure of interest (and not TSP exposure in general). Please state this clearly in the title of the paper, in the introduction and in the discussion.

Response 3:
Thank you so much. We have realized this oversight and clearly stated the fact that TSP exposure at home is the particular measure of interest.

Comment 4:
Minor essential revisions
In para. 2 on p. 6, the sample size of the survey and its composition in relation to Wave 1 are described. According to these descriptions, 58 of Wave 1 non-smokers had started smoking by Wave 2. How many of the Wave 1 smokers had quit smoking by Wave 2?

Response 4:
There were 219 smokers from Wave 1 who quit by wave 2 and are included in this analysis. This is mentioned on page 7, but we have re-worded the sentence for clarity as below:-

“The sample for this study is based on 2813 non-smoking respondents participated in Wave 2, of whom 219 were smokers in Wave 1 but had quit by Wave 2, 2041 were non-smokers in Wave 1 and followed successfully to Wave 2 and 553 were newly recruited non-smokers in Wave 2. …”

Comment 5:
There is some inconsistency of the text and table 4: For the odds for ‘concern that tobacco smoke harms children’, the ‘very/extremely concerned’-group is the reference group in the table, but in the text the reference for the odds presented seems to be ‘unconcerned/a little concerned’. Please choose one consistent reference.

Response 5:
Sorry for this oversight. We have now revised the text as “those Bangladeshis who were unconcerned/a little concerned had the 3.45 times the odds of exposure compared to those who were very/extremely concerned.”

Comment 6:
In table 3, two variables are presented that have never been explained in the text (‘talk to friends before making a decision’ and ‘will give up activities if family disapproves’). Since these are not really self-explanatory, it remains unclear what these variables actually measure. Please either describe and explain these variables in the text or remove them from the table.

Response 6:
We have now explained these two variables in the methods section.

Comment 7:
In table 1, I would first present the ‘married’-category and then the ‘otherwise’-category (same applies to religion).

Response 7:
We have now made the above changes in the revised manuscripts.

Reviewer#2

Comment 1:
Major Compulsory Revisions
Background section. Paragraph 3: this paragraph is quite long and covers a number of topics, however does not end with a take-home point. You cover factors that may impact on TSP exposure in the home, however there is not a clear reasoning behind the investigation of the factors you have selected for examination.
Response 1:
We have now revised the background section and addressed the reviewer’s concern.

Comment 2:
Paragraphs 3 and 4 cover similar content - particularly the studies you present, you might consider restructuring these two paragraphs to clarify the message of the manuscript and the need for the study.

Response 2:
We have now combined these two paragraphs.

Comment 3:
Minor Essential Revisions. Please check in-text citations - some appear in square brackets, others in parentheses; where multiple citations are used sometimes they do not appear in numerical order. Please make consistent use of the hyphen when referring to non-smokers (vs nonsmokers). Background section, paragraph 5 - in the last sentence delete the first word 'by'

Response 3:
We have now made all the above changes in the revised manuscript.

Comment 4:
Methods. In the sentence: "The sample for this study is based on 2813 non-smokers or former smokers (n = 219) participating in Wave 2 of the ITC Bangladesh Survey". please clarify if the 219 former smokers are in addition to the 2813 non-smokers, or whether the 2813 non-smokers is the total including the former smokers.

Response 4:
To make this clear, we have now reworded the sentence as below.

“The sample for this study is based on 2813 non-smoking respondents participated in Wave 2, of whom 219 were smokers in Wave 1 but had quit by Wave 2, 2041 were non-smokers in Wave 1 and followed successfully to Wave 2 and 553 were newly recruited non-smokers in Wave 2. …”

Comment 5:
Results paragraph 3: change "kids" to 'children'

Response 5:
We have made the above change in the revised manuscript.

Reviewer#3

Comment 1:
Minor Essential Revisions:
The common language to refer to cigarette (or other burning tobacco products) exposure to non users is secondhand smoke exposure. I am not sure why the authors are using a different terminology, tobacco smoke pollution. I recommend using secondhand smoke exposure (SHS) instead.

Response 1:
We have changed the term from TSP to SHS throughout the manuscript.

Comment 2:
Major Compulsory Revisions:
Abstract: The Methods section of the abstract should tell how SHS was defined.

Response 2:
We have included the definition of SHS exposure in the abstract as below:
“Exposure to SHS at home was defined as non-smokers who lived with at least one smoker in their household and who reported having no home smoking ban.”

Comment 3:
Results in the Abstract: Not clear if exposure at home means all who live in the home are exposed or only the participants (respondents) in the survey.

Response 3:
In the revised manuscript, we made it clear that the exposure rate is “among the participants” in the study.

Comment 4:
Conclusions in the abstract: Given that the authors are referring to interventions in the home, they should not call it "policy initiatives." Probably a better term is educational initiatives.

Response 4:
Thank you. We also agree that “educational initiatives” would be a better term. We have made the change in the revised manuscript.

Comment 5:
Background: First sentence: Given that the authors are referring to global rates of SHS, probably the citation used (U.S. specific) is not the best one. Should use reference 4 better for this statement.

Response 5:
We have included the 4th reference as you suggested. We also kept the USDHHS reference. Because, reports of USDHHS is widely used internationally as reference documents.

Comment 6:
Methods, data source: It says that in wave 1 there were 1,311 smokers and in Wave 2 there were 2,521 smokers, which is only about 19% of wave 1 smokers. Is there a typo here or is this correct?

Response 6:
Actually, this paragraph states that 3,111 smokers were surveyed in wave 1. The comma after “Wave 1” might be confusing. We have now revised the sentence as below:-

“….In Wave 1, we surveyed 3,111 smokers and 2,660 non-smokers during March and June, 2009…”

Comment 7:
Exposed to TSP (SHS) was defined as having complete (the manuscript do not specifies what is meant by "complete") smoking rules in the home AND in the case in the home there were more than 1 participant in the survey, both (or more if more than 2 participants in the home) have to agreed in answering a complete ban in the home to be considered "non-exposed." This is a major issue given that the measure of exposure is self-reported as opposed to validated real SHS exposure (it is known, at least in the U.S., that people greatly underestimate their SHS exposure). In addition to this, if more than 1 participant in the home, they need to be in agreement the home have complete no smoking rules (in the home) to be considered non-exposed. This is bias toward higher SHS exposure in the home.

Response 7:
We thank the reviewer for this comment.

By “complete smoking ban” we meant, smoking not allowed anywhere in the home”. We have made it clear in the “Measures section” of the revised manuscript.

While it’s true that the measure of exposure we used isn’t optimal, it’s the best that could be done with the survey data we have. Rather than under-estimate non-exposure to SHS, if there was any disagreement about exposure among different household members, the possibility exists that there is some level of exposure in the home. As the reviewer states, people tend to under-report exposure (compared to objective measures). So although there is slippage, it seems that if all interviewed household members report smoking is not allowed at all (“complete” ban), then there is consistency across household members.

The other option would be to take exposure “as is” for each member, so if one member says smoking is allowed (in all areas or in some areas only) and another member says “not at all”, and then estimate prevalence that way. Those estimates are presented above, and illustrate that using multiple reports of home smoking bans increases the proportion of adults potentially exposed to TSP.

While the measure of TSP exposure that we used has its limitations, it does illustrate that a substantial proportion of non-smoking adults in Bangladesh might be exposed to TSP if they do not have a complete, self-imposed ban on smoking in their homes. Multiple reports of such a ban
add strength to implication that there is a complete ban on smoking in the home, because all interviewed adults agree on how they conduct their affairs in their own home. To flip this around, if I’m a smoker in and I want to sneak a smoke in somewhere in my home, I might well do this, even though I know others in the home would frown on this. Furthermore, even though we used self-report, it’s hard to think of any reason why someone would report having a ban in the home when they don’t – i.e., they have nothing to gain by lying or being inconsistent with other reports.

Comment 8:
Statistical Analysis: Stepwise regression analysis is no longer recommended as a statistical tool (Annals Guidelines on Stepwise; http://wileyeditingservices.com/en/). This was used to select variables in the study.

Response 8:
While we agree that using backwards elimination procedures is an older approach for model selection, this is particularly true for unweighted data. In our case, with weighted data, there are fewer options available to build models from an initial set of candidate variables. For unweighted data, newer methods such as all possible subsets selection can be used. However, these methods have not be developed for complex survey data, so there are fewer options available. This is why we chose to use a stepwise selection procedure.

Comment 9:
Given the issues above, I am not confident the results in this study are reliable, including the major issue if the authors truly measured SHS exposure in the home. Probably what they really measured was home rules.

Response 9:
We have now addressed all the concerns that the reviewers had made. Our results are reliable to describe the factors associated with SHS exposure at home.