Author’s response to reviews

Title: Associations of ambient air pollutants with regional pulmonary tuberculosis incidence in the central Chinese province of Hubei: a Bayesian spatial-temporal analysis

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Author’s response to reviews:

Ref. No.: ENHE-D-19-00301

Title: Impact of air pollution on regional pulmonary tuberculosis incidence in the central Chinese province of Hubei: a Bayesian spatial-temporal analysis

Dear Editor Jan C. Semenza,

Thank you for your letter and review of our manuscript. Reviewers’ comments are very precious and helpful for us to improve our manuscript. We have carefully addressed the reviewers’ comments and tried our best to make revisions as requested. A point-by-point response within the 'Response to Reviewers' are detailed below. Tracked changes are coloured red in the revised manuscript.

We appreciate the reviewers’ positive comments and critical suggestions, and hope our revised version to be published in Environmental Health. If there are additional changes that we should make, please let us know. Thank you very much for your consideration.

Sincerely yours,

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Response to Reviewers

Response to editor’s and reviewers’ comments on the manuscript (ENHE-D-19-00301)

Reviewer #1:

* The title should read association instead on ‘impact’. I presume assessing impact is different. This should be reflected as well in many of the paragraphs where 'impact' is used.

Response: Thanks for your suggestion. We modified the title as “Associations of ambient air pollutants with regional pulmonary tuberculosis incidence in the central Chinese province of Hubei: a Bayesian spatial-temporal analysis”, as well as other paragraphs where 'impact' is used in the revised paper.

* It appears that the authors had access to individual level data with date of TB diagnosis? In addition, the air pollution data is available on a daily scale. Based on this, could the authors aggregate the data to weekly/monthly scale (or potentially request the data from CDC) and rerun the analysis. In this case the authors can tease out temporal relationship between the pollutants and TB incidence by looking at various lags. The current study does not tell you how much lag elapses before you see increase in TB diagnosed cases for the various pollutants. A lag response relationship would be interesting to see with potential to include non-linear effects. In the current analysis, authors assume linear effects. This may be useful in an early warning system

Response: Good suggestions. We analyzed the lag response relationship of ambient air pollutants on regional TB at different lag months by spatial-temporal interactive model. The result showed in “Fig. 4” in the revised manuscript. We observed a significant response relationship at a moving average of lag 0–1 month, for each 10 μg/m3 increase in SO2. However, no significant association was observed for 10 μg/m3 increase in PM10 and NO2.

Due to the lack of weekly air pollution data before 2012, the current study analyzed the lag elapses on a monthly scale only. In future research, we would like to explore lag elapses with daily or weekly data in recent years.

* The article could greatly benefit from extensive English review

Response: Thank you for your kindly comments. We re-checked the manuscript carefully and revised the English language and grammar of the manuscript in the revised paper.
The revised manuscript was edited for proper English language, grammar, punctuation, spelling, and overall style by one or more of the highly qualified native English-speaking editors at AJE. The revisions were marked in the manuscript (tracked changes).