Reviewer's report

Title: Role of Verbal Autopsy in determining high occurrence of cancer along Huai River Basin, in China

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Reviewer: Kathleen Kahn

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Re-review of paper with new title: Role of Verbal Autopsy in determining high occurrence of cancer along Huai River Basin, in China

General comments
This paper is greatly improved but requires some further work.

Major compulsory revisions

Abstract
1. Clarify what “distance from Huai River by field investigation” means. Clarification also required in main paper
2. Statement of statistical methods used is not needed in the abstract.
3. Results section: standardize use of one or two decimal places
4. Were the 626 patients identified in health facilities? If this is the case, then the bias and likely underestimate should be mentioned.
5. Conclusion – You mention the high occurrence of cancers in S County and Y district. What is this compared to? And what about the higher occurrence in study vs control areas, ie in areas with higher water pollution than others?

Methods
1. Clarify what “distance from Huai River by field investigation” means.
2. Study areas – a map would be useful to show the location of S County and Y district to River Huai and its branch.
3. The selection of control and study areas is now better described. But can you clearly state that the study areas were closer to the river and had higher levels of pollution than the control areas?

Results
4. Results section on “consistency in cancer mortality and morbidity rates”: please standardize use of “morbidity” and “prevalence”. Fig 2 says prevalence rate and in text you talk about morbidity rates. If data on cancer patients were hospital-based rather than population-based, then you need to discuss the bias inherent in this and the likely under-estimate. I think you can make the point more clearly – perhaps in the discussion – that you are using cancer prevalence rates
to verify the VA cancer assignments since the pattern is similar, ie high prevalence rates have higher mortality due to cancers as determined by VA.

Discussion

5. Discussion, new paragraph starting “There was high proportion of circulatory and respiratory system disease of the rural nationwide in 2000…..” If you include this, I feel you need to do a fuller comparison including other conditions. How do other non-communicable diseases, and the main infectious diseases, compare between national rates from 2000 and the VA estimates in S County and Y district?

6. Literature on VA and its validation – I still believe you need to provide a fuller account of the relevant literature on VA. Are there any papers on the validation of VA for non-communicable diseases in settings outside of China? You should reference your statement that “…..VA result using physician review…. are most widely used but ….are regarded as of high sensitivity and specificity for selection COD and low repeatability of deriving COD.”

7. You mention just one example of potential confounding factors (number of factories) – but there are many including lifestyle factors such as smoking, diet. I would mention a few more examples.

8. Last discussion paragraph – you should mention the main research questions that this work has laid the groundwork for answering.

Tables and figures

9. Table 3. The title should be more explanatory – is this the excess mortality rate in the study compared to controlled area? Or is this excess mortality compared to national statistics?

10. Figure 2. Label vertical axes. The legend indicates a green box for “mortality rate control area” which is not included in the bar graph.

Minor essential revisions

1. Discussion – in paragraph 1 the word “developed” is incorrectly used in relation to India, Ethiopia and other African sites.

2. There is still one use of the word “tendency” which needs to be changed to “trends” – 2 paragraphs from the end of the discussion section.

Level of interest: An article of importance in its field

Quality of written English: Not suitable for publication unless extensively edited

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'