Author’s response to reviews

Title: Blood pressure and hypertension prevalence among oldest-old in China for 16 year: based on CLHLS

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Author’s response to reviews:

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Re: BGTC-D-19-00304R2

"Blood pressure and hypertension prevalence among oldest-old in China for 16 year: based on CLHLS”

Dear Editor-in-chief and Reviewers:

Thank you very much for your positive comments on our manuscript and the opportunity to revise the paper. We are grateful for the reviewers’ constructive suggestions and our revised paper has incorporated all the suggestions. Below is our line by line response to the reviewers’ comments. We hope that the revised paper meets your approval for publication in BMC Geriatrics.

Sincerely

Miao Liu, Yao He

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28 Fuxing Road, Beijing 100853, China.
Editor Comments: Thank you for your further work on this manuscript. I feel in general the reviewers' comments have been well answered, but the text is in need of further revision in relation to these.

1. In response to reviewer 1 comment 5, the authors discuss possible explanations for the apparently contradictory results between BP levels and hypertension prevalence across waves, suggesting that greater awareness and diagnosis rates for hypertension may have led to lower BP levels. However, in the Discussion on page 8 it is incorrectly stated that BP increased over the 16 years. From Fig 1 it is clear that mean BP decreased substantially between waves 1 and 2 and remained similar across the subsequent waves. Alongside this the prevalence of hypertension increases, probably due to the higher diagnoses rates. On a related comment, on page 9 it is stated that those with high normal BP may soon progress to hypertension. However, this occurs alongside a decrease in the prevalence of all hypertensive subtypes. This may suggest that the increased high normal prevalence reflects better treatment of hypertension. Finally, some of the results in Fig 2 appear incompatible.

Specifically, the overall prevalence of hypertension increases over time while all subtypes decrease and the prevalence of stage 1 in 1998 appears higher than the overall prevalence of hypertension. This may be to do with including excluding diagnoses from definitions, but this needs to be clearer and in the manuscript and footnotes. Please carefully review these data and their interpretation in the manuscript.

Reply: Thanks for your careful review. We have deleted and corrected the discussion about the changing trend of BP levels (page 2, line 9-12; page 5, line 3-6,13-16; page 7, line 15-17; ).

All the incompatible may be attributable to the careless calculation errors in the prevalent of different stages of hypertension.

After careful review, all the authors found that the prevalence of different stages of hypertension was calculated as people who had the corresponding stages of hypertension divided by those who had hypertension. This would cause the result “prevalence of stage 1 in 1998 appears higher than the overall prevalence of hypertension.”. And we corrected accordingly. The recalculated prevalence was shown in the new figure 2. The corresponding parts in the manuscript have also been modified (page 6, line 12-16).

2. Please include something in the main text or appendices on the evaluation of bias described in response to rev 1 comment 2.

Reply: Thanks for your careful review. We have added the related description in the limitation (page 9, line 14-19).
“Fifth, we didn't have information about treatment and medication information. Although this kind of definition had been adopted in quite a number of epidemiological investigations, the resulting bias cannot be ignored. Combined with the results of previous studies on treatment rates in China and the prevalence of hypertension in this study, this bias may lead to an overestimation. However, taking 2014 survey as an example, there were a total of 299 participants who were classified as hypertension according to previous history with SBP≤140 mmHg and DBP≤90 mmHg this time. And the misclassification participants were calculated as 299-299*30% (the treatment rate according to the China PEACE Million Persons Project)=209, and the misclassification rate= 209/4587=4.6%. this number times.”

3. Clarify the lack of inclusion of diagnoses in the ISH definition and how diagnoses are included in any other definition in the methods.

Reply: Thanks for your careful review. We have added the lack of inclusion of diagnoses in the ISH definition in the revised manuscript (page 4, line 10). For other related definitions, we already have the clear stating about with or without diagnosis in the methods.

“ISH was defined as SBP≥140 mmHg and DBP<90 mmHg regardless of previous hypertension diagnosis history.”

4. Include the lack of survival data and inability to do sensitivity analyses in relation to survival of at least 1-2 years in the limitations.

Reply: Thanks for your careful review. We have added this limitation in the manuscript (page 9, line 19-21).

“Sixth, only cross-sectional analysis was conducted, and there was lack of the lack of survival data analysis and sensitivity analysis in relation to survival of at least 1-2 years.”

5. Please clarify where and how the text has been revised in relation to the proportion of participants in nursing homes as I cannot see where this is in the revised manuscript.

Reply: Thanks for your careful review. We have added in the discussion part (page 9, line 1-4).

“Second, most of the participants of CLHLS were from communities, and there was only less than 5% who lived in living in nursing homes or other institutions. But this was in accordance with the situation in China, since more than 95% of the elderly were home-based care.”
6. Please provide page and line numbers for all changes in your response.

Reply: Thanks for your careful review. We have added the page and line numbers for all the changes in the response accordingly.

Once again, we really appreciate the reviewers’ comments and suggestions, which are valuable in improving the quality of our manuscript.

Should you have any questions, please contact us without hesitate.

With kindest regards,

Sincerely yours,

Miao Liu, Yao He

Reference