Author's response to reviews

Title: Analysis on associated factors of uncontrolled hypertension among elderly hypertensive patients in southern China: a community-based, cross-sectional survey

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Version: 3
Date: 27 June 2014

Author's response to reviews: see over
Dear editor,

Ms. No.: 3702310001212463

Title: Analysis on associated factors of uncontrolled hypertension among elderly hypertensive patients in Southern China: a community-based, cross-sectional survey

Thank you very much for your e-mail on 5th June. We would like to express our sincere thanks to you for the constructive and positive comments. We have revised the manuscript, taking the editor’s and reviewers’ comments into consideration. In particular, point by point responses to the concerns have been listed in details below.

Replies to editor’s comments:
Thanks for editor’s comment. First, we provided detailed information on antihypertensive medications among treated patients presented in Table 3 and mentioned this in the Discussion part. The original table 3 was renamed as Table 4. Second, we edited the paper and included some language corrections. Third, we added the “competing interests” part according to your suggestion.

Replies to Reviewer 1:

Q1, please give the references for the classification of diabetes, abnormal level of lipid profiles in the Definition part.

Response:

Q2, I cannot read the Figure 1 and 2 from your submission, please check and modify it.

Response:
Figure 1 and 2 have been edited.
Q3, Could you rephrase the findings in the Results part, do not repeat the figures listed in the tables.

Response:
Thanks for reviewer’s comment. We revised the findings in the Results part according to your suggestion.

Q4, Check the typos in the last line of Definition and table 2 and decimals in the table 3.

Response:
Thanks for reviewer’s comment. We revised the mistakes in our paper according to your suggestion.

Q5, As shown in the table 3, put BMI and abdominal obesity in the one adjusted regression model, have you consider the overadjustment in the final model? How to explain the results?

Response:
Thanks for reviewer’s constructive comment and we agreed with your suggestion. The correlation coefficient between BMI and abdominal obesity was 0.7 (P=0.03), and we adjusted the model using BMI and abdominal obesity, respectively, these results were compared with the original model. All of the models were evaluated by goodness of fit, and the final model that adjusted without abdominal obesity showed in table 4, was proved best, and we mentioned this in the Statistical analysis part.

Q6, In previous report, the socioeconomic status may be associated with the prevalence of hypertension and control rate. As a part of SES, personnel income or family income also need to be adjusted in the regression model. If the variable was available, please add it in the text and model, otherwise, note it as limitation in the Discussion part.

Response:
Thanks for reviewer’s comment. The socioeconomic status were not included in our study, such as personal or family income, which may be associated with the prevalence of hypertension and lack of adequate control. It is a limitation of our study and we added this limitation in the Discussion part. We will consider this in future studies.
Replies to Reviewer 2

Q1, Examples for grammatical error: “hypertension is considered accounted for approximately 50% of the coronary”, “Recently, we conducted a survey including of 10644 elderly hypertensive patients living in”, “We excluded 356 subjects from our analysis because missing information.” “And the control rate tended to be higher among those with lower educational and those with higher BMI” and “and these linear trends were statistically significant”.

Response:
Thanks for reviewer’s comment. We revised the grammatical errors according to your suggestions. We corrected some ambiguous sentences and expressions, sorry so much for our mistakes that troubled you, more details were provided in the manuscript.

Q2, There was no mention of the quality control about the physical measurements and the biochemical examination, which need to be specified in the method section of manuscript. Another thing need to be detailed is the collection, storage and measurements of the blood specimens.

Response:
Thanks for reviewer’s comment. We added some contents of quality control about the physical measurements, the biochemical examination and some detailed information of the collection, storage and measurements of the blood specimens in the Field survey and quality control part.

Q3, The sampling method was cluster sampling, there was no mention of the response rate in different clusters. The characteristics of participants in different clusters also should to be clearly described.

Response:
Thanks for reviewer’s comment. We added the response rates in different clusters in the Sampling part, there were no significant differences (P=0.34). The information of characteristics of participants was presented in additional file 1.

Q4, In the manuscript, 356 subjects were excluded from the final analysis because of missing information. Was there any heterogeneities between these patients and the included patients?
Response:
Thanks for reviewer’s comment. There were not any heterogeneities between the excluded patients and the included patients (P>0.05); this information was included in the Sampling part according to your suggestion.

Q5, In the discussion, some sentences copied from section of results need to be removed.
Response:
Thanks for reviewer’s comment. We removed the sentences copied from section of results, and added some information about the antihypertensive medications in the Discussion part.

Q6-1, P<0.05 should be “P=”
Response:
Thanks for reviewer’s comment. The “P<0.05” has been replaced as “P=” except when P<0.001 in our manuscript.

Q6-2, “Mean values and proportions were compared by the Student’s t-test and Fisher’s exact test, respectively”. Were all the tests for categorical variables using Fisher’s exact test? In my opinion, chi-square test may be a more appropriate selection.
Response:
I agree with reviewer’s opinion. We re-analyzed some categorical variables using chi-square test instead of Fisher’s exact test, we revised this in the Statistical analysis part and the table 1.

Q6-3, Adjusted variables in the adjusted logistic regression models should be specified in the section of statistical method.
Response:
Thanks for reviewer’s comment. Adjusted variables including sex, age and areas in the adjusted logistic regression model were specified in the Statistical analysis part.

Q6-4, Due to the cluster sampling, the characteristics of patients from the same cluster were more similar than that of the patients from different clusters. Therefore, the patients in the same cluster were not the independent samples which does not obey the assumption of independency for general statistical methods. So it needs to be considered in the statistical analyses and the statistical methods should be modified.
Response:
Thanks for reviewer’s constructive comment. In our study, community was considered as the unit of the level 2, and subject was considered as the unit of the level 1, and we built a logistical regression with 2 levels, the empty model showed that there was no significant difference in the random effect of level 2 (P=0.08), considering that there were no obvious differences among the clusters, we would like to select multiple regression to analyze.

Replies to Reviewer 3:

Q1, The main weakness is that this study did not reflect the recent JNC 8 Hypertension Guidelines, especially for the BP goal of less than 150/90mmHg for hypertensive persons aged 60 years or older. For the purpose of comparing the control rate with the previous studies, the results from the cutoff of 140/90mmHg could be added. However, the final results should be presented based on the cutoff of 150/90mmHg to define the control rate of hypertension, which means that methods, results, and discussion related to this updated guideline should be totally revised.

Response:
Thanks for reviewer’s constructive comment. We redefined the BP goal of control rate of hypertension, the final results have been presented based on the cutoff of 150/90 mmHg according to the JNC 8 Hypertension Guidelines. And that methods, results, discussion and reference (number 10) related to this have been revised.

Q2, Lack of information about the medication which the subjects diagnosed with hypertension were taking would be an additional limitation.

Response:
Thanks for reviewer’s constructive comment. We provided detailed information on antihypertensive medications among treated patients presented in table 3, and the original table 3 was renamed as table 4.

Q3, In the methods, the participation rate of 96.7% is not likely to be the overall participation rate of this study. This rate should be based on the proportion of the participants among the number of source population.

Response:
We apologize for our mistake and thank you for your comment. The “participation rate” should be “response rate”, and we have revised it in the Sampling part.

**Q4,** In the results of abstract, we cannot say “the risk” in a cross-sectional study. Only the association could be mentioned.

**Response:**
I agree with reviewer’s opinion. The “the risk” has been replaced as “association” according to the suggestion.

**Q5,** In multivariable logistic regression analyses, the adjusted variables need to be specified. In addition, adjusted ORs that were not significant also need to presented.

**Response:**
Thanks for reviewer’s comment. We specified the adjusted variables of age, gender and areas in our multivariable logistic regression analyses in the paper, and we also presented all of the ORs in the Table 4 according to the suggestion.

**Q6,** In tables, tenths decimal digit for the percentage would be enough, except some biochemical measurements.

**Response:**
Thanks for reviewer’s comment. In tables, we used tenths decimal digit for the percentage except the biochemical measurements.

We tried our best to improve the manuscript and made some changes in the manuscript. These changes will not influence the content and framework of the paper. We appreciate for Editors/Reviewers’ warm comments and suggestions earnestly, and hope that the corrections will meet with your approval. Should you have any questions, please contact us without hesitation at the following address, phone and e-mail:

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Once again, thank you very much for your comments and suggestions.

Best regards.

Li Yang on behalf of the authors