Author’s response to reviews

Title: Additive interaction of snoring and body mass index on the prevalence of Metabolic Syndrome among Chinese coal mine employees: A Cross-Sectional Study

Authors:
Yanyan Li (liyanyan_sxmu@sina.com)
Qian Gao (gaoqian1206@163.com)
Lu Li (Qian.Lu93@163.com)
Yanan Shen (SYNPEKING@163.com)
Qing Lu (qlu@epi.msu.edu)
Jianjun Huang (hjj1958@126.com)
Chenming Sun (bun005@126.com)
Hui Wang (annieyuner@163.com)
Nan Qiao (qiaonan_sxmu@sina.com)
Cong Wang (wangcong_sxmu@sina.com)
Haixia Zhang (zhx.196@163.com)
Tong Wang (tongwang@sxmu.edu.cn)

Version: 1 Date: 24 Aug 2018

Author’s response to reviews:

Dear Editor and Reviewers,

Thank you for the valuable comments on the manuscript entitled "Additive interaction of snoring and body mass index on the prevalence of Metabolic Syndrome: A Cross-Sectional Study" (ID:BEND-D-17-00304). Those comments are very helpful to us. We have studied these comments carefully and revised accordingly. Responses to the comments are as follows:

Technical Comments:
1. Author's Contribution
Please use initials to refer to each author's contribution in this section, for example: "FC analyzed and interpreted the patient data regarding the hematological disease and the transplant. RH performed the histological examination of the kidney, and was a major contributor in writing the manuscript. All authors read and approved the final manuscript"

Response: Corrected as you suggested, thank you very much. (Author's contribution section, page 14)

2. Title: please consider including in the title the study population reported in the paper.

Response: Thank you for your suggestion. The title has been changed to “Additive interaction of snoring and body mass index on the prevalence of Metabolic Syndrome among Chinese coal mine employees: A Cross-Sectional Study”.

(Reviewer 1): This manuscript explored the interaction between snoring and obesity in coal mine employees. In general, this is a well-written manuscript. A few suggestions may help improve its quality. In the introduction, it would be helpful to expand more regarding why it is important to conduct this study in coal mine workers. In Methods, the formula for sample size estimation needs to be explained, with description of what each letter stands for. The Discussion has included important issues. It would be helpful to start with a brief overall summary of findings rather than starting with snoring and MetS association.

There are several grammar errors. Examples are: "While several studies have been showed that...", "...established evidences..."

Response: Thank you for your comment.

1) Coal mine workers exposure to long-term high-risk environment. They are constantly threatened by productive dust (coal dust, silica dust and mixed dust), harmful physical factors (noises, vibration, hot and humid environments), productive poisons and other factors (lead, benzene and trinitrotoluene)(Wang Z X, Qin R L, Li Y Z, et al. A study of occupational hazards in 23 coal mine enterprises in China and their protection status.[J]. Journal of Environmental & Occupational Medicine, 2009:565-568.). Poor production environment, shift work and frequent coal mine accidents in recent years have led to the occupational stress in coal mine workers. The above factors increase the risk of metabolic syndrome and lead to higher prevalence of metabolic syndrome in coal mine workers than the general population.(Liang J, Tian S S, Qiao N, et al. Relationship Between Physical Activity Patterns and Metabolic Syndrome Among Male Coal Miners of Shanxi Province in China[J]. Int J Sport Nutr Exerc Metab, 2017, 27(1):50-58.) The potentially useful biomarkers of MetS, such as snoring and BMI, play a more valuable role in coal mine workers than in the general population. However, the exact relationship between snoring and MetS in coal mine workers was not clear. In addition, studies concerning the interactive effect between snoring and BMI on MetS are lacking.
Therefore, we conducted this study in coal mine workers and explored the possible interaction between snoring and BMI. Thank you again for your suggestion, it is valuable for us. We have added the above contents in the introduction (Introduction section, page 3, paragraph 1, line 9-20).

2) I have explained the the meaning of each letter in the formula for sample size estimation (Method section, page 6, line 1-2).

3) As you suggested, we have added a brief overall summary of findings at the beginning of the discussion (Discussion section, paragraph 1).

4) A native English speaker read and helped us to correct the grammar errors.

Reviewer 2 (Reviewer 2):

REVIEWER COMMENTS FROM REPORT: This is a good study, but I did not understand the rationale for the study until I read the Discussion section. The authors address interesting and potentially useful biomarkers of risk for metabolic syndrome (MetS). The analysis is well done and well explained. The modelling of influence by the confounders is good and helps explain the risks for MetS.

REQUESTED REVISIONS:

I especially liked the discussion about the possible pathways by which snoring is associated with risk for MetS. I think that some of this text, now in the Discussion section, might be moved to the Introduction section. This might help readers to better understand why this study was done.

The authors acknowledge that the participants may have under-reported their snoring. I think this is a bigger concern than acknowledged by the authors. How would the participants know: a) if they snore and b) how much they snore? Other people in the paraticipant's household might better answer these questions.

ADDITIONAL REQUESTS/SUGGESTIONS:

The English language usage is good, but there are minor issues with word usage, number agreement, and a few grammatical errors. A native English speaker should review the ms. to correct these issues.
Response: Thank you for your comments.

1) As you suggested, we have moved the content about the possible mechanisms of snoring and BMI on MetS from discussion to introduction. It really makes rationale of the study more clearly (Introduction section, paragraph 4-5).

2) The situation you mentioned does exist. During the investigation, we found that some participants can not clearly answer whether or not they snore and how often they snore. Actually, for those people, we encourage them to call their families and ask about their snoring habit on the spot. A few people who can't receive reply from families during the field investigation, we called them to get answers and filled in the questionnaire the next day. Therefore, the results of this study are relatively reliable. Thank you again for your valuable comments. We have added the following content in the manuscript: “This question is answered by the participants themselves or with the assistance of their families” (Method section, subsection 2, line 6-7).

3) A native English speaker read the paper and helped us to correct the grammar errors.