Author’s response to reviews

Title: Prevalence and associated factors for Pterygium in Han and Mongolian adults: cross-sectional study in Inner Mongolian, China

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Author’s response to reviews:

Dear editors,

On behalf of my co-authors, we appreciate the editors and reviewers deeply for giving us the opportunity to revise our manuscript. Thank you for your patient review and precise comments. We have immediately modified our manuscript according to your suggestion. To make my responses clear and brief, I have separated the answers to the reviewers’ comments according to several categories.
1. Objective: the objective of the study is clear and well written. No comments.

2. Design: The design of the study is adequate. No comments.

3. Abstract: authors should mention whether the analysis on pterygium was part of a larger population based study

   Answer: Thank you for pointing out this problem. We have added the CNHS to the abstract.

4. Methods:

   A. What is meant by mental patients? Was a mini-mental scale or any such instrument used to assess the mental status of participants? In the methods, authors should also give an idea of what parameters were measured.

      Answer: Sorry for the unclear expression. We excluded the patients with mental illness by self-reported history. We have written the certain parameters in the methods.

   B. Execution: Why was a BMI greater than 28 and 24 selected? Arbitrarily?

      Answer: In 2007, the International Life Sciences Institute (ILSI) organized the Working group on obesity in China (WGOC) in China. The WGOC enrolled 240,048 Chinese adults for cross sectional study and developed a BMI classification standard, which was applicable to Chinese people. According to the standard, a BMI of 18.5-23.9 is normal-weight, 24.0-27.9 is overweight, and ≥28 is obesity [1].


   C. The level of exercise, DM, HTN, and lifestyle should include the words "self - reported". What is meant by "daily visual acuity?" Did authors measure visual acuity on multiple days? Also please mention how pterygium was detected during the survey. Was it based on torch light or slit lamp or imaging with remote interpretation?

      Answer: Sorry again for the unclear expression. It is “visual acuity”. We obtained information from participants by questionnaires, so it was self-reported. The pterygium was detected by slit lamp. We have corrected these in the manuscript.

   D. Factors such as living in rural areas, outdoor occupation, and education level appear to be interdependent on each other causing variance inflation. Have authors checked for this? What about interaction terms during statistical modelling? Authors should mention how
the best fit model was derived from all the factors available. Like mentioned above, there appears to be an over inflation and this needs to be addressed, including use of interaction terms. Given the fact that there are 23 p-values provided in table 2. Was any correction performed for multiple comparison? Perhaps use a stricter p-value such as p<0.002 (0.05/23) rather than p<0.05?

Answer: Thank you very much for raising this very important question in statistics. The interactions between these factors do need to be taken into consideration. We performed interaction terms in logistic regression according to your advice. It is true that there are factors interacting each other. We rewrote the Statistical Analysis and showed the results below.

E. A univariate analysis between presence of pterygium and risk factors should be first done, then a multivariable analysis should be performed. This is likely a printing error and should be corrected.

Answer: Thank you for your reminder. We have corrected them. The specific results were shown in table 3-8.

5. Results

A. In results, authors say "We noted that the prevalence increased with age". Please provide a metric to quantify this. For example, prevalence increased XX times per 10 year increase in age (95% CI= XX - XX).

Answer: It is imperative to provide a quantitative result. We have added this part of results into the manuscript.

B. The forest plots are unnecessary and are a repetition of the data in the tables. Authors can keep any 1. I recommend keeping the table. The subgroup analysis is anyway shown in forest plots.

Answer: Thank you for your advice. We have kept table 9 and Figure 4, 5 to make the manuscript cleaner.

6. Discussion

A. Discussion is a bit lengthy and can be considerably shortened. The section on gender can be omitted. Sections on obesity and BMI can be significantly shortened.

Answer: We appreciate your suggestion very much. We have shortened the section on gender and merged the sections of BMI and body fat percentage. Wish the new manuscript looks cleaner and more interesting to read.
B. When others have found ethnic differences within different groups in China, authors report no differences between Han and Mongols. This is in contradiction to other reports. Please provide a plausible reason for this in the discussion. This was the initial hypothesis and main crux of the paper but has not been dealt with in the discussion at all.

Answer: Thanks again for pointing out this very important question. The discussion about Han and Mongolian is needed. We have reviewed more related literature and put forward some new points about this section.

C. Please remove the word "rare" from the first sentence of discussion. You can replace it with "first" if you wish.

Answer: Thanks for your advice. We have replaced the word “rare” with “first”.

D. Interpretation: The authors should cite the study by Nemet AY "Epidemiology and Associated Morbidity of Pterygium: A Large, Community-Based Case-Control Study." that also evaluated factors associated with pterygium in a large database.

Answer: As a matter of fact, the points provided in this article are advisable. We quoted the result about smoking in our discussion.

7. Presentation (including language, grammar, or structural formatting)

Answer: We used AJE to correct our manuscript before we submit this article. Unfortunately, there were still some problems with presentation. We have reread our manuscript very carefully and corrected them. Meanwhile, we sent the new one to a native English speaker to improve the English presentation. Wish the new manuscript could be qualified.

Please do not hesitate to contact us with any comments or questions. We truly appreciate it. Thank you again for your time and consideration.