Author’s response to reviews

Title: The association between tuberculin skin test result and active tuberculosis risk of college students in Beijing, China: a retrospective cohort study

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Author’s response to reviews:

Point-to-point response to reviewers’ concerns

INFD-D-19-00781 (Research Article)

Title: The association between tuberculin skin test result and active tuberculosis risk of college students in Beijing, China: a retrospective cohort study

Authors: Demin Cao; Zhiguo Zhang; Zhen Yang; Shubo Ma; Zhaogang Sun; Huijuan Duan; Baoli Zhu; Fei Zhao

Thank you for the valuable suggestions to improve this article. All concerns have been addressed in the revised version. All changes have been underlined in the new version to facilitate easy evaluation. The responses are summarized below.
In the first paragraph of the results section, the authors mentioned that a total of 68288 individuals were included in the enrollment TB screening project. Among them, 67428 actually participated (this is the number in Table 1 of the original version of the manuscript). Finally, only 67292 students were finally included in the follow-up cohort (this is the number in Table 1 of the revised version of the manuscript).

I agree with the reviewer that the discrepancy in numbers between the original and revised manuscript raises the concern on the quality of data and analysis. In addition, I still have questions on how the 67292 students were finally selected for analysis. How many college freshman were there within the study period? Is it obligatory for them to join the TB investigation project? What were the reasons of refuse to participate?

Answer: Thank you for your reminding. In the 1st revised manuscript, we had not clearly expressed the reason why we modified the number of follow-up.

In the original version of the manuscript, we reported that 67428 individuals actually participated in the TST screening (Table 1 of the original version of the manuscript). In the revised version of the manuscript, the number of individuals who not accepted TST was added, a total number of 68288 individuals should accept the TST screening, but 67428 of them actually participated (Table 1 of the 1st revised version of the manuscript). This is in accordance with the original version of the manuscript.

In the original version of the manuscript, we reported 67340 individuals were included in the follow-up cohort (Table 1 of the original version of the manuscript). In the 1st revised manuscript, the 48 individuals with active TB history, which might affect the accuracy of results as a risk factor, were excluded in the follow-up cohort, though they were followed up and none of them developed as active TB. Finally, 67292 individuals were selected for subsequent analysis. We considered that it might more clearly to report the number of individuals finally included in the analysis in Table 1. The individuals included in the subsequent analysis were consistent in two versions of the manuscript. So there was no contradiction between the original and 1st revised versions of the manuscript.
In summary, 68288 college freshman were there within the study period. TB investigation project of college freshmen is a local rule of Beijing. It is semi-obligatory for them to join but not affect the enrollment in college. Because of allergy, pregnancy, acupuncture syncope, skin disease and so on, some of them refused to participate.

Reviewer reports:

Comments of Reviewer 1:

Sheng-Wei Pan (Reviewer 1): The authors have adequately response to the comments and have revised the manuscript accordingly. Thus, I feel that this manuscript is now presented in an easy readable format and is suitable for publication in BMC Infectious Diseases.

Comments of Reviewer 2:

Sheng-Yuan Ruan, MD, PhD (Reviewer 2): I appreciate the authors’ responses to my comments. The authors have revised their manuscript accordingly. However, the revision has further exposed some weak points of this study. For example, there is inconsistency in case numbers between the original and revised manuscript (Table 1). That raises the concern about the accuracy of statistical analysis. I have few more comments for their revised manuscript.

Comment 1. The manuscript requires English editing.

Answer: As suggested, the language has been polished in the revised manuscript.

Comment 2. The follow-up plan should be clearly addressed in the manuscript because it is concerning detection bias. For example, how frequent were the subjects evaluated during the follow-up period? Is CXR a mandatory examination during the follow-up? How many TB cases were diagnosed due to the follow-up procedure and how many cases were diagnosed due to TB-related symptoms?
Answer: As suggested, the follow-up plan has been added in the revised manuscript. They can be found in the method section, lines 135-139, page 5 and results section, lines 188-190, page 7.

Comment 3. Please address your policy about latent TB infection (LTBI) treatment in the manuscript. If no any subject received LTBI treatment in the study, it should be maintained in the manuscript as well.

Answer: As suggested, the policy about latent TB infection (LTBI) treatment has been added in the revised manuscript. They can be found in the method section, lines 131-135, page 5.

Comment 4. The sentences in lines 170-173 are confusing. Please fix the problem of brackets.

Answer: In response to this concern, the sentences in lines 170-173 have been rewritten as “For TST negative individuals, reaction sizes of them were mainly distributed in 0~1 (51401, 76.39%), 4~5 (5278, 7.84%) and 8~9 (1328, 1.97%); for TST positive individuals, the reaction sizes of them were mainly distributed in 10~11 (2849, 4.23%), 12~13 (1279, 1.90%) and 14~15 (1925, 2.86%) (Table S1)”. Also, the format of Table S1 has been modified.