Response to Reviewers' comments

Dear Editor,

We thank you for your careful consideration of our manuscript. We appreciate your response and overall positive initial feedback and made modifications to improve the manuscript. After carefully reviewing the comments made by the Reviewers, we have modified the manuscript to improve the presentation, therefore providing a complete context for the research that may be of interest to your readers.

We hope that you will find the revised paper suitable for publication, and we look forward to contributing to your journal. Please do not hesitate to contact us with other questions or concerns regarding the manuscript.

Best regards,

Reviewer #1:

Specific Comments to Authors: This cross-sectional study aimed to evaluate the association between depression and malnutrition in patients with pulmonary tuberculosis. This topic is very important; however, some issues should be addressed.

Response: We thank the reviewer for the positive and encouraging comments, the manuscript was modified to improve the manuscript.

Comments: - Abstract should be summarized. The results need to be rewritten according to APA. Add your message and future recommendations in the conclusion.

Response: We thank the reviewer for this kind reminding. According to the journal format requirement, each section of the abstract should fulfill the word number requirement. Still, we modified abstract according to APA and future recommendation was added in the conclusion.

- The introduction does not cover all elements of the study. It should be clear if other studies were conducted previously. Could you state the gap in the literature and why the study is important? Add the hypothesis of the study.

Response: We thank the reviewer for the careful review. According to the comments, the introduction was improved. We added several references and stated the literature gap, also the hypothesis was added at the end of *Introduction* section.

- How did you calculate the sample size? Could you state the reason for withdrawal if any? and the numbers - For PHQ-9 and QoL, how did you achieve reliability and validity?

Response: We thank the reviewer for the comments. Sample size was calculated using n= $(z)^2 \times p(1-p)/e^2$, z is 1.96 (the value at 95% confidence interval), e is the standard error (estimated at 1/8), and p is the ratio of

depression. We estimated 50% of the PTB patients would develop depression, so the p in the study is 50%. Usually, not all patients could conform the study protocol and there are also may be undesired incomplete or missing data. In this regard, to guarantee the viability, we estimated a 20% loss. It should be noted that we enrolled more patients in practice and about 10% patients were excluded. Both PHQ-9 and Qol were have been validated in China and there Cronbach's alpha values were both higher than 0.7. Therefore, in the present study, we did not further test their reliability and validity.

- How and who administrates the data collected during the study period.

Response: The reviewer raised a good question. The names who collected the data and the means how to collect the data were added in the *Data collection* section.

- The discussion is very short and needs some revisions. Kindly rewrite and reframe it along the following lines: i. Main findings of the present study ii. Comparison with other studies iii. Implication and explanation of findings iv. Strengths and limitations v. Conclusion, recommendation and future direction.

Response: We thank the reviewer for the constructive comments. The discussion was now substantially modified following the recommended flow.

- The conclusion should be concise.

Response: We thank the reviewer for the kind reminding, the conclusion was shortened and modified.

Re-reviewer

SPECIFIC COMMENTS TO AUTHORS

Abstract:

- Add detailed data about the participants. - The conclusion should be precise. Add the future directions.

Response: We thank the reviewer for the comments. The data for eligibility screening were added in the main text. Consideration for the word number limitation, we did not present the demographic data about the enrolled participants, for which we hope is acceptable. The conclusion in the current form presented the main findings and future directions were added. "Malnutrition and poor social function were significantly associated with depressive symptoms in PTB patients. A prospective large-scale study is needed to confirm these findings."

Introduction: - This section cannot cover all the elements of the study. - Define "Pulmonary tuberculosis" in detail. - Explain the measured variables. - The significance of the study needs more details. -Add the hypothesis of the study.

Response: We thank the reviewer for the comments. In the introduction section, we described "Pulmonary tuberculosis (PTB), a chronic wasting disease, is a chronic pulmonary infection which is caused by Mycobacterium tuberculosis." We admit that in order to keep the logic clear, not all interested variables were described in this section. We tried to define all variables in the methods. The significance and hypothesis are added in the introduction section. "Appropriate and timely intervention for malnutritional and/or depressed PTB patients is a medical need. We hypothesized that depression may be prevalent in malnutritional PTB patients in China. Therefore, in this study, we aimed to evaluate the association between depression and malnutrition in PTB patients in China."

Methods: - The study design, ethics, and setting are not clear. - How and who administrates the data collection? - How did you achieve the validity and reliability of the outcome measures? - For statistical analysis, explain all methods used in detail and add the software used. - Please, re-frame the

components (SPICES) for methods i. Study design, setting, sample size ii. Participants iii. Issue of interest (exposure) iv. Comparison v. Ethics and endpoint vi. Statistical analysis - What were the eligibility criteria for participants? - Mention the settings and locations where the data were collected. - How was the sample size determined?

Response: We thank the reviewer for the comments. This study is a hospital-based cross-sectional study, which was conducted from April to July 2019 in Shanghai Pulmonary Hospital Affiliated to Tongji University, China. All authors were trained and all participated in data collection. The PHQ-9 and quality of life were measured by verified scales, and other variables were not validated, since most variables were presented in the medical records, such as age and treatment duration. Data analysis was performed by SPSS software (version 20.0 Chicago, IL, USA). We respectively disagree with the reviewer for "re-frame the components", since the methods in the current form is readable, easy to comprehend and include all the required components. This is a hospital-based study, and the data was collected in the hospital. In addition, sample size was also presented in the method sections.

Beside to all these comments, other reviewers raised similar concerns and were revised accordingly to improve the quality of this manuscript. Additionally, one reviewer even raised the opposite comment to the current reviewer that the sample size calculation should be separated from the statistical analysis part. Therefore, the manuscript was not substantially re-edited.

We thank the reviewer again for the overall positive comments.