Author’s response to reviews

Title: Relationship between psychological health and quality of life of people affected by leprosy in the community in Guangdong province, China: a cross-sectional study

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Author’s response to reviews:

Bipin Adhikari (Reviewer 1)

Q1. Conclusion: Your study found a high correlation between poor quality of life and poor psychological health. My suggestion would be to focus on how to improve their quality of life more than detecting the cases of leprosy, which is decreasing over the years. You want to focus on these PALs.

You may want to frame like this:

In addition to focusing on the factors associated with poor quality of life and mental health amongst PALs, there is an urgent need of stigma reduction strategies, rehabilitation programs and social integration. This may be achieved by engaging with the member of the communities together with the leprosy affected persons to design a locally tailored interventions program.

R: Thanks for the reviewer’s constructive suggestion. We have rewritten conclusion according to reviewer’s suggestion. See conclusion section.

Introduction

Q2. Line 7 to 16: This may lead to…. Eyesight. Please break this sentence into shorter ones.
R: We have revised the sentences as below:
leprosy can cause an inability to feel pain, consequently, the repeated injuries or infections caused by unnoticed wounds would contribute to the loss of parts of the extremities. (background section, line 15, 1st paragraph)

Q3. Line 16 to 18: replace as: While these clinical symptoms and consequent disabilities due to leprosy can persist life long, the stigma attached to this disease outweigh the suffering among leprosy affected persons.

R: Thanks. We have replaced this sentence according to reviewer’s suggestion. See the last sentence of the first paragraph in background.

Q4. Line 20 to 24: Generally, …………………leprosaria
What do you mean by this sentence? Are you trying to say people who live in their hometown are different to who used to live in leprosaria? If so, better to explain what makes them different?

R: We have added some sentences to explain the differences between them as below: Most of leprosy patients have backed home after been cured, while some of them still live in there due to discrimination and homelessness in their native area. This part of population has been defined as PAL live-in leprosaria. The multiple drug therapy (MDT) has been popularized in China in 1980s, isolation was unnecessary for leprosy patients and the treatment can be obtained in the local leprosy control institution, and few patients were settled to leprosaria from then on. (background section, line 3-10, 2nd paragraph)

Q5. Line 24 to 28: Despite…..this sentence needs paraphrasing. It should not mean that government has ignored the LAP. Rather if I am right, you were trying to say something like this?
As the burden of new cases of leprosy is decreasing, there is decrease in hospital attendance. This might have led to decrease in government’s priority to this disease. Nevertheless, the people affected with leprosy who continue to live with some form of disability even after completing the treatment tend to be stigmatized by community members (PMID: 24908528, 26047512).

R: We are agreeing with reviewer’s opinion that government’s priority to this disease has been decreased. In addition, most of general population in China are hold a misconception that leprosy has already been eliminated and few attentions should pay on leprosy control, and their discriminations against PAL seems not to be reduced for the none disability one. To avoid
misunderstanding, we have revised this sentence as below. “The discrimination against leprosy is ubiquitous”. (background section, line 12-13, 2nd paragraph)

Q6. Line 30: External discrimination…..

There is no such external discrimination and internal and self. There are three types of stigma amongst PAL, they are: discrimination, perceived stigma and internalized stigma. Paraphrase the sentence with the literatures below:


R: We have paraphrased this sentence on the basis of above literatures as below:

this discrimination may come from neighbors, family members, and even medical staff, and the consequences of discrimination affect the quality of life of PAL. (background section, line 13-15, 2nd paragraph)

Q7. Line 34 to 40: First of all, clarify what kind of aid are you talking about? Are you trying to say stigma reduction strategies to target these LAP is challenging for several reasons, firstly, as these people tend to scatter around the communities, it is difficult to identify them. Secondly, as has been previously established (PMID: 24901307, 15755198), leprosy affected persons tend to conceal their conditions to prevent themselves from being identified and stigmatized.

R: We have revised this part as below: Moreover, physical rehabilitation aids and stigma reduction strategies targeting PAL living in community are challenging for several reasons: first, as PAL tend to scatter around the communities, it is difficult to identify them; second, PAL tend
to conceal their conditions to protect themselves from being identified and stigmatized [13].

(Background section, line 15-19, 2nd paragraph)

Q8. Paragraph change:

People affected with leprosy are vulnerable to …..

R: We have changed this sentence as below: PAL are vulnerable to economic, psychological, and social pressures. (Background section, line 19-20, 2nd paragraph)

Q9. Line 3 to 7: the psychological…..of leprosy:

How does rigorous environment affect psychological status?

R: This is a wrong expression, we have replaced “environment” by “social atmosphere”. (Background section, line 5, 3th paragraph)

Q10. Line 13 to 19: you don’t need to rationalize the need of your research comparing with Ghana and Malawi. China itself is a unique context and your sample has a lot to say.

Your rationale could be something like this: At the context of decreasing burden of leprosy globally and in China, it is hard to draw conclusion about the quality of life of leprosy affected persons living in a community. Until so far, there has not been any research of this size in mainland China to explore the quality of life of leprosy affected persons who have completed the treatment. The main objective of this study was to…..#

R: We have revised this part according to reviewer’s comment. See the end of last paragraph in background.

Q11. Line 21 to 46: The warm….this system. Move this to method section under the heading research context

Line 46 to 50: merge/blend this to objective at the last sentence illustrated above#.

Methods

Research context

…………………. 
Study design

........................................

Study site and participants

R: We have moved the sentences to the research context section (Method section, Research context part), and merged the sentence of Line 46 to 50 to last sentence illustrated above. (background section, the last sentence of third paragraph).

Q12. Line 4: The detected….How did you detect them? Explain. I would say something like this: (Avoid saying detected) People affected with leprosy were identified from the registry based at.………..

R: We have revised this sentence as “PAL who were registered in the LEPMIS were included in this research.” (Method section, line 2-3, Study site and participants part)

Q13. Line 3: What do you mean a cutoff of 3 points ….in this “environment”? Are you trying to say:

The GHQ12 has been previously validated and reliable instrument to measure……and has been tested in China (cite if there are any studies who have used this scale).

R: We have changed these sentences to that:¨The GHQ12 has been previously validated for measurement of psychological disorder [20]. The standard GHQ method of scoring 0-0-1-1 was employed for each item, which allowed a maximum score of 12, and those with a GHQ score of 3 or higher were considered to have a psychological disorder [21].¨ (Method section, line 3-6, Measurement part) The word “environment” has been deleted to avoid misunderstanding.

Q14. Line 21: Praraphrase: Since WHOQOL can only briefly explore the psychological aspects of people affected with leprosy, GHQ12 was utilized to evaluate the psychological status of the participants.

In discussion and conclusion: as this study’s participants are leprosy affected persons living in a community who have already completed the treatment; my suggestions would be to frame/focus the discussion and conclusion more towards how we can improve their quality of life and mental health.
1. Integrate them into the community without discrimination, for example principles inherent in community engagement can be applied (PMID: 28914184). This means, selecting both non affected and affected community members to increase their social participation by for example designing locally suitable stigma reduction strategies for the community. There is a forthcoming article, where there is an extensive discussion on how community engagement can be applied to minimize the stigma in a community.

2. Although new cases of leprosy are decreasing, to avoid further progression of poor quality of life and mental health amongst these people affected by leprosy, a syndromic approach to identify and minimize the progression of psychosocial disorders are urgently needed.

3. People living with deformities and disabilities need active surveillance and treatment for their wounds, rehabilitation programs for their support and occupational measures for them to contribute meaningfully into a society will be helpful.

R: We have supplemented some contents to highlight the measures which can improve quality of life and mental health of PAL:“Active surveillance and treatment for the wounds of PAL with deformities and disabilities is necessary, and rehabilitation programs for their support and occupational measures for them to contribute meaningfully into a society will be helpful.” (Discussion section, line 3-6, 3th paragraph) “Moreover, some locally suitable stigma reduction strategies which aim to increase their social participation, such as mass meetings, audiovisual shows, short movie, local human resources recruitment or training will be help to minimize the stigma in a community”. (See the third paragraph in Discussion, line 14-17)

DERICK AKOMPAB AKOKU, PhD (Reviewer 2)

Q1. The manuscript: Association between psychological health and quality of life in persons affected by leprosy living in community: a cross-sectional study of 7,230 participants in Guangdong province, China, reports on a cross sectional study that was conducted in China. The manuscript could be improved with more contextual information, more clarity on the methodology and analytical method, proper interpretation of the results and proofreading of the article by someone with a strong command of the English Language or a native speaker.

R: The manuscript has been edited by native speaker before the first submission, we have also arranged a second modification by another native speaker this time, the Editing Certificate has submitted to the website.

TITLE
Q2. The manuscript title, “Association between psychological health and quality of life in persons affected by leprosy living in community: a cross-sectional study of 7,230 participants in Guangdong province, China” could be modified to “Association between psychological health and quality of life in persons affected by leprosy in a community in Guangdong province, China: a cross-sectional study.”

R: We have changed the title according to reviewer’s comment.

BACKGROUND SECTION

Q3. I think it will be a good idea for the authors to briefly highlight in their first paragraph the epidemiology/burden of Leprosy globally and narrow it to that in China.

R: We have supplemented brief introduction of leprosy endemic in China and the entire world. “In 2015, a total of 174,608 new leprosy cases were reported in 136 countries worldwide, which corresponds to a prevalence rate (PR) of 0.29 per 10,000 individuals in a given population [3]. This is a decrease from the PR of 0.32 per 10,000 in 2014 [4]. The Chinese government initiated a ten-year (2011-2020) project in 2011 in an effort to eliminate the hazards of leprosy. These efforts, along with sustained economic growth, have resulted in a rapid decline in endemic leprosy in China in recent years. The number of new cases of leprosy in 2015 was 678, which was 40.7% less than in 2011 [5]. The rate of decline was substantially higher than the contemporaneous global average and average for China in 2001-2010 [6].” See Background section, line 3-10, the first paragraph.

Q4. Line 20-24: This statement is not clear to the reader. Please rewrite this sentence to make it easier for the reader to understand and if possible, include a reference at the end of the sentence.

R: We have revised this statement and added a reference literature to make it clearer to readers to understand the group which we aim to study. “Chinese government constructed a lot of leprosaria to isolate leprosy patients and treat them at the same time since 1949. Most of leprosy patients have backed home after been cured, while some of them still live in there due to discrimination and homelessness in their native area. This part of population has been defined as PAL live-in leprosaria. The multiple drug therapy (MDT) has been popularized in China in 1980s, isolation was unnecessary for leprosy patients and the treatment can be obtained in the local leprosy control institution, and few patients were settled to leprosaria from then on.” See line 3-10, the second paragraph, Background.
Q5. In the current version of the manuscript, the authors did not highlight gaps in the literature which formed the basis of their study. Has there been a lack of scholarly literature on the QOL of Leprosy patients in China? Was has been the shortcomings of previous research in the area which the authors could use as the basis for their study? I would suggest that the introduction/background should be rewritten taking these into account.

R: Thanks for the reviewer’s comments. We have revised the background/introduction to highlight the gaps of current study. Currently, there existing numerous literatures on QOL among leprosy patients. However, few researches were concentrated on PAL live in community, because of their information are hard to obtain. Additionally, the sample sizes of these studies were small. It is hard to draw conclusion about the quality of life of leprosy affected persons living in a community. This is why a large survey was needed, and we have also stated these gaps in the manuscript. We have also stated that “The information of PAL living in community can only be obtained from official leprosy control institutions, which leads to less research on the PAL. Thus far, there has been no large size of research in mainland China to explore the QOL of PAL who have completed the treatment.” in Background section, line 9-12, the last paragraph.

Q6. The authors did not explicitly state the objectives of their study. I would suggest the authors to state their objectives. E.g, “The objectives of this study was…..”

R: We have stated our objective at the end of introduction: “The main objective of this study was to investigate the psychological status and QOL of PAL living in communities and to clarify the relationship between these two factors in a large scale.” (Background section, the last sentence of last paragraph)

METHOD SECTION

Study design:

Q7. The authors should also describe the profile of the community where the study was conducted. What is the name and profile of the community? Please provide more details about your study setting so that readers outside Guangdong can understand the setting where the study was conducted.

R: Our research was conducted in the whole territory of Guangdong Province, about 21 municipal and 108 county level leprosy institutions have submitted their investigation data, we have added this sentence to the manuscript. Besides that, thousands of communities have been contained in our research, we have recorded some information of communities the PAL living, amount of spaces would be consumed to present the details of these communities. Furthermore, we didn’t want to disclose the information of communities, because that may arouse panic
among the other residents in these community, and the privacy of PAL may also be endanger. That is why we didn’t provide the details of the study communities.

Q8. The author have indicated in the manuscript that the study was a cross-sectional study but failed to mention in the manuscript how they calculated their sample size. What parameters were used? What sampling method was used?

R: This research is a census which aims to investigate the QOL and psychological status of all the people affected by leprosy (PAL) live in community in Guangdong province. It is not a sample of the overall population, so we supposed that sampling method and sample size calculation were not necessary.

PARTICIPANT RECRUITMENT AND QUESTIONNAIRE ADMINISTRATION

Q9. The authors wrote: “…..investigators first downloaded the information of each person from LEPMIS and then excluded persons who had died with the assistance of the local public security bureau.” It is not clear how participants were approached/recruited. Please describe in a systematic manner (step-by-step) how the participants were recruited.

R: We have introduced the procedure of participant recruitment step by step. See “Participant recruitment and questionnaire administration” part, Method section.

Q10. The authors did not properly describe in the current version of the manuscript how questionnaires were administered in the study. Was it self-administered or interviewer administered questionnaires (paper-based or electronic). Were questionnaires administered in the community at household level or … and by who? Were the questionnaires in Chinese or English? Please provide details to your readers for reproducibility.

R: We have added the details about how questionnaires were administered in the study as below:

The study objectives and the rights of participant in this study and the guarantee of their information security were introduced in informed consent form. The questionnaire was administered after the informed consent form had been signed. A paper-based questionnaire was used in this survey and the questions were shown in Chinese. Each question was asked in Mandarin Chinese and provincialism was used if necessary. See the last paragraph of “Participant recruitment and questionnaire administration” part, Method section.

DATA COLLECTION AND OUTCOME MEASUREMENT
Q11. Please kindly use separate sub-headings for (1) data collection and (2) measures. The authors should tell their readers how data were collected. Were participants informed about the objectives of the study? Were participants assured of confidentiality etc prior to data collection? If these are not described for a cross-sectional study, then it is the reviewers view that there shortcomings in the study design and implementation.

R: We have divided the data collection and measures parts in manuscript. The informed about the objectives of the study and assured of confidentiality were supplemented in the “Participant recruitment and questionnaire administration” part (the last paragraph of “Participant recruitment and questionnaire administration” part, Method section). The details of data collected have also presented in the current version of manuscript. See Data collection part, Method section.

Q12. What were your dependent/outcome and independent variables? Did you explore and considered co-variates in the study? I suggest that the authors describe their study variables and how the outcome variables were measured. It will ease readability if the authors used subheadings to describe how the outcome variables were measured. I think it will also be a good idea if the authors briefly describe each of the dimensions.

R: We have added a sentence in measurement section to introduce the primary outcome of this study (Method section, line 1-2, Measurement part). Additionally, we revised the statistical analysis part to state the dependent variable, independent variables, and how we explore covariates and selecting variables (Method section, line 10-14, Statistical analysis part). The measurement of the outcome variable has been introduced in the measurement part, Method section.

Q13. The authors did not tell their readers how the raw scores for the 4 dimensions were transformed. Please provide details on how this was transformed for reproducibility.

R: We have added the classification of each dimension and score transformation guidance of question in the manuscript, see line 9-14, measurement part, method.

STATISTICAL ANALYSIS

Q14. The authors should explain to their readers when Chi-square and Kruskal Wallis tests were used and under what circumstances?

R: Thank you for your suggestion. We only conducted Chi-square tests to compare the psychological status of different categories, because the outcome (psychological status<3 points
vs. ≥3 points) is binary categorical variable. We revised the sentences accordingly. See Statistical analysis part, line 3-5, Method.

Q15. The authors mentioned that: “Logistic regression analysis was performed to evaluate the relationship between the GHQ12 score and the dimensions of QOL”. I assume this was a binary outcome variable. The authors should explain to their readers how the GHQ12 score was coded.

R: Yes. The GHQ12 score was categorized into two groups based on a cutoff of 3 points (<3 points vs. ≥3 points) according to the coding strategy of the scale. We mentioned how the GHQ12 score was coded in the “Data collection and outcome measurement” section as below. “The standard GHQ method of scoring 0-0-1-1 was employed for each item, which allowed a maximum score of 12, and those with a GHQ score of 3 or higher were considered to have a psychological disorder [21].” (Method, line 3-6, Measurement)

Q16. The authors did not inform their readers if they tested for interaction terms/effect modifications among any co-variates of interest to determine if the relationship had a modifier effect. What about confounders?

It is not clear in their statistical analysis section if they performed bivariate analyses before multivariate logistic regression analysis. What criterion was used to retain candidate variables? The authors did not inform their readers what they used to quantify the strength of the association. There is no mention of Crude and Adjusted Odds Ratios in statistical analysis section.

R: Thanks for the reviewer’s question. In the analysis, we are interested in the association between GHQ and the four dimensions (physical, psychological, social and environment) of QOL of leprosy patients. So, we included the demographic characteristics (age, sex, employment status, and profession) of leprosy patients as covariates. We agree that we should state clearly on the analysis strategies. We have now revised the statistical analysis section. The interaction and moderation effects of other confounders were not the main interest of this study. Further studies are needed to explore the interaction and moderation effects of the covariates, which we have listed as a limitation of this study. (line 4-7, limitation)

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Q17. The authors indicated that: “This research has been reviewed and approved by Ethics Review Committee of Guangdong Provincial Center for Skin Disease and STI Control.” Was
there any reference number assigned to the approval. If so, I suggest the authors to include it in parenthesis.

R: We have submitted the Ethical Review Report to the website, while no reference number is available.

RESULTS

Q18. Demographics: The authors should report on the response rate of the study.

Line 20-22 “Fear of having their information revealed was the most frequent reason (311 PALs) for people not participating in this research”. I suggest that this should be removed from this section and incorporated under the data collection section of the manuscript.

R: We have removed these sentences from the result section and incorporated under the data collection part, line 1-6, method section.

Q19. I note that in the manuscript there was used of psychological status and mental health interchangeably. I would suggest that the authors use either consistently throughout the manuscript to enable their readers.

R: We have replaced “mental health” by “psychological health” throughout the manuscript.

Q20. Line 38: Table 1 title should be modified to preferably read Demographic characteristics by mental health status.

Please modify Table 2 as well. Eg., Quality of Life (QOL) scores by mental health status

R: We have modified the titles of table 1 and table 2 according to reviewer’s suggestion.

LOGISTIC REGRESSION ANALYSIS OF GHQ12 SCORE

Q21. The authors stated in Line 3-5 that: “Gender, age, employment, and profession were independent factors for psychological health status”. If these are independent factors, then Adjusted Odds Ratios (AOR) should be reported not Crude Odds ratio (OR). Please make changes as necessary. I would suggest that the authors use two decimal places while reporting Odds Ratios and 95% CI.
R: Thanks for the reviewer’s suggestion. We have revised the sentence as “Gender, age, employment, and profession were associated with psychological health status” (Results, line 5-6, Logistic regression analysis of GHQ12 score part), and we reported the adjusted Odds Ratios. Additionally, we used two decimal places while reporting the odds ratios and 95% CI. Please see section “Logistic regression analysis of GHQ12 score” and table 3.

Q22. Please include a footnote below Table 3 to inform your readers what “Other” profession means. The age group “<30” is wrongly placed in Table 3. Age group should most appropriately be in chronological order. What was the referent category for QOL in Table 3?

R: Thank you. We have now added a footnote to explain “other profession”. We rearranged the orders of “age” and other variables to make sure “age” were in chronological order. The quality of life has four dimensions (physical health, psychological health, social relationship and environment). They were continuous variable, so no reference category. Please see Table 3.

LOGISTIC REGRESSION ANALYSIS OF GHQ12 SCORE

Q23. The authors stated that: “PAL who were female (female vs. male: OR=1.309, 95%CI=1.132-1.515) were more likely to have a mental disorder”. This interpretation does not reflect the data in Table 3. Rather, it should read: “Males were more likely compared to females to have a mental disorder (AOR=1.309, 95% CI=1.132-1.515). This is because females are the referent category (AOR=1.0) according to Table 3 reported in the current manuscript. I would suggest that the authors conduct a re-analysis of their data and provide appropriate interpretation.

R: Thanks. We have now revised the sentences according to the reviewer’s suggestion. See “Logistic regression analysis of GHQ12 score section”, results.

DISCUSSION AND CONCLUSION

Q24. Please discuss the most significant findings of your study taking into account the available scholarly literature on the subject.

R: We have modified the discussion and made it focus on the feasible measures to improve psychological status and QOL of PAL.
Q25. In the limitation section, the authors mentioned “A sampling method was applied to this survey”. They however, failed to mention how sampling was conducted in the methods section. This study has other limitations which I think the authors need to highlight.

R: We have deleted the expression about sampling method, because census has applied in this study. We have also added some contents to highlight other limitation as below: This cross-sectional survey only explored the association between QOL and psychological health among PAL. Further studies are needed to identify the causal relationship between QOL and psychological health, or any interaction and moderation effects of covariates.

Q26. Please ensure that your conclusion is drawn from your findings/data. I would request the authors to rewrite their conclusion section.

R: We have rewritten the conclusion and made it corresponding to the research findings. See conclusion.

REFERENCES

Q27. I would request the authors to use a bibliographic software to organize their references so that it conforms with BMC Public Health style.

R: We have used the endnote software to organize references.

OTHERS

Q28. The reviewer requests the authors to insert page numbers in subsequent drafts of the manuscript so that it can be easy for page and line number to be assigned on reviewers comments.

R: The page numbers have added to the manuscript.