Author's response to reviews

Title: Health-related quality of life and long-term care needs among elderly subjects living alone: A cross-sectional study in rural areas of Shaanxi Province, China

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Author's response to reviews: see over
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Dear Editors and Reviewers,

On behalf of my co-authors, we thank you very much for giving us an opportunity to revise our manuscript. We appreciate your positive and constructive comments and suggestions on our manuscript titled “Health-related quality of life and long-term care needs among elderly individuals living alone: A cross-sectional study in rural areas of Shaanxi Province, China” (ID: MS: 1833410838843784). The comments were all valuable and very helpful in revising and improving our paper, and provided important guidance to our research. We have studied the reviewers’ comments carefully and have made revisions that are marked in red. Our answers to the reviewers’ comments are listed below. We have carefully revised our manuscript according to the comments. Attached please find the revised version, which we would like to submit for your kind consideration. We express our great appreciation to you and the reviewers for comments on our paper. We look forward to hearing from you at your earliest convenience.

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Responses to the reviewers’ comments:
Reviewer #1: Prof. Xiaomei Li

1. Edit the entire paper for correct English language and grammar.
   
   **Response:** Thanks for the suggestion. We have sent the revised version of our manuscript to Liwen Bianji (Edanz Editing) for language polishing before we submit.

2. In the ‘Subjects’ section, which region does the Ansai, Gaoling and Shiquan represent respectively? Why and how these three areas were selected?
   
   **Response:** Thanks for your questions. The sample was selected randomly using stratified random sampling. The entire Shaanxi Province was broken down into three stratums: South Shaanxi, North Shaanxi and Central Shaanxi; and in each stratum, one county was completely randomly selected for the survey. The sample sites represented different levels of economic development and areas with different terrain features in Shaanxi Province, so it was a representative provincial sample.

   We added text in “Subjects” as follows:
   The entire Shaanxi Province was broken down into three stratums: South Shaanxi, North Shaanxi and Central Shaanxi; and in each stratum, one county was completely randomly selected for the survey. The three counties were Ansai in North Shaanxi, Gaoling in Central Shaanxi and Shiquan in South Shaanxi (see lines 7-10 from top, Page 5) in the current manuscript.

3. How the items of ‘Care requirements’ were developed?
   
   **Response:** Thanks for this question. We extensively researched the relevant literature before developing the initial draft of the questionnaire. Then, after revision by a clinical nurse specialist, the final draft of the nursing care questionnaire was developed.

   We added text in “Instruments” as follows:
   This questionnaire was developed using the Delphi expert consultation method. (see lines 18-19 from top, Page 6) in the current manuscript.

4. What about reliability and validity of the questionnaire regarding ‘Long-term care needs’? Please provide the corresponding reference.
   
   **Response:** Thanks for the comments. As stated in “Evaluations of reliability and validity”, Cronbach’s $\alpha$, a reflection of reliability of the long-term care needs questionnaire, exceeded 0.7 for all items ($\alpha = 0.866$). Set validity and discrimination validity were calculated for each of the questionnaire dimensions. The relevant coefficient of each item, after removing the overlapping part of the dimension, was higher than 0.40. The relevance between each item within the dimension was significantly higher than the relevance between each item in other dimensions, suggesting that aggregate validity and discriminant validity were good.
A corresponding reference has been added, as suggested (see Refs.[17]).


5. In ‘Quality control’ section, the author mentioned that it was a face-to-face field survey, and trained assistants helped each participant complete the questionnaire. However, in the ‘Subjects’ section, the author recruited relatives or neighbors of the participant with limited autonomy as the subjects. Is there any contradiction between these two points? How did the author control the quality of the collected information from the participants themselves and relatives or neighbors of the participant with limited autonomy? Additionally, based on the informed consent and face-to-face field survey, how did the author define ‘Questionnaires that were less than 80% complete’?

Response: Thanks for the comments. There was no contradiction. Well-trained professionals had a thorough understanding of each item on the questionnaire, which ensured its accuracy. It was administered one-to-one and face-to-face. However, for the elderly living alone who could not express their ideas clearly, relatives who knew their situation well were invited to participate in the survey. They were able to provide clearer responses, so that the completeness and reliability of the questionnaire could be guaranteed. In the data analysis, we adjusted for the effect of different respondents on the results. There were a total of 48 questions on the questionnaire. For each questionnaire, if more than 10 items were unanswered, that questionnaire was rejected. Among all the questionnaires, only five were eliminated.

We added text in “Data analysis” as follows:
In the data analysis, we adjusted for the effect of different respondents on the results. (see lines18-19 form top, Page7 in the current manuscript).

We also added text in “Results” as follows:
Five questionnaires with more than 10 items unanswered were not included in the data analysis. (see lines10-12 form top, Page8 in the current manuscript).

6. Were there common influencing factors for both HROoL and long-term care needs? Please give more detailed information.

Response: Thanks for the comments. We found that age, economic status and living conditions were common influencing factors for both HROoL and long-term care needs.

Reviewer #2: Zsuzsanna Lelovics
1. some spelling and grammar mistakes, and smamistakes with formating.
Response: Thanks for your comments. We have sent the revised version of our manuscript to Liwen Bianji (Edanz Editing) for language polishing before we resubmit.

2, Level of interest: An article whose findings are important to those with closely related research interests.  
Response: This correction has been made, as suggested.

3, Quality of written English: Needs some language corrections before being Published  
Response: Thanks for the suggestion. As mentioned, we have sent the revised version of our manuscript to an editing company for language polishing before we resubmit.

4, Statistical review: No, the manuscript does not need to be seen by a statistician.  
Response: One of the co-authors of this manuscript is a statistician.

5, Declaration of competing interests: I declare that I have no competing interests  
Response: This correction has been made, as suggested.

We hope that these revisions are satisfactory and that the revised version will be acceptable for publication in BMC Public Health.

Thank you very much for your work concerning my paper.

Wish you all the best!

Sincerely yours,
Ning Liu