Author's response to reviews

Title: Status and determinants of health behavior knowledge among the elderly in China: a community-based cross-sectional study

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Version: 3 Date: 4 May 2013

Author's response to reviews: see over
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Version: 3 Date: 3 May 2013

Author’s response to reviews: see over
Dear Mr Jimmar Dizon and Prof Omar Rahman:

Thank you for consideration of our article for publication in your journal. We have carefully studied your suggestions and the comments of the reviewers and made corrections accordingly, which are highlighted in red in the revised version of the manuscript. According to the journal style, we also have revised figures, tables and additional files. Point-by-point replies and other revisions are listed below.

Looking forward to your reply,

With kind regards,

Sincerely yours,

Zhiqin Yin

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Point-by-point responses to the reviewers’ comments:

Reviewer's report 1

Title: Status and influencing factors of health behavioral knowledge among the elderly in China: A community-based cross-sectional study

Version: 2 Date: 16 March 2013

Reviewer: Jianqian Chao

Reviewer's report:

I have number my comments and divide them into two.

Level of interest: An article whose findings are important to those with
closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Answer:** Thank you for your positive comments. The revised manuscript has been proofread by a subject expert editor and approved by a senior editor. All the editors are native English speakers (please see additional file 2: Certificate of English Editing).

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Answer:** We asked a statistician for help, and she felt statistics was acceptable.

**Declaration of competing interests:**

I declare that I have no competing interests

Reviewer's report 2

**Title:** Status and influencing factors of health behavioral knowledge among the elderly in China: A community-based cross-sectional study

**Version:** 2 **Date:** 10 March 2013

**Reviewer:** Bonnie WM Siu

**Reviewer's report:**

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Minor Essential Revisions:
1. For the abstract, can consider reporting more data on the results part of the abstract;

**Answer:** Yes, and the data has been added to the abstract in the revised version now appears as:

“Results: On the basis of the responses to 38 questions in the survey, approximately 46.7% of elderly people were identified as having a good knowledge of health. Knowledge of the proper amount of certain foods and liquids as well as that of psychological disorder among the elderly recorded a low percentage at < 60%. Factors related to health behavior knowledge among the elderly were as follows: educational attainment, past occupation, and location of residence. Participants who finished high school or higher had 6, 4, and 3 times greater odds of possessing adequate health knowledge than those who attained below primary school, primary school, and junior high school levels, respectively. Those with experience as administrative and technical personnel, workers, migrant workers, and farmers had 2.5, 2.3, 3.9, and 2.1 times greater odds of possessing adequate health knowledge, respectively, than those who were unemployed. Respondents living in the city had 3.7 times greater odds of possessing adequate health knowledge than those living in the countryside. In the stem family, the health knowledge of the elderly was significantly lower than that of their children (P < 0.001). However, the influence of their children’s
knowledge upper their elder’s was relatively weak.”

2. Page 7, the 2nd last line: of the 24,575 participants, 47.6% responded, please clarify the number of participants;

   **Answer:**

   We are sorry that there was an error in the previous version, i.e. “of the 24,575 participants” should be “of the 575 participants”. It has been corrected in the revised version (see page 7, the 2nd paragraph of results).

3. Page 8, the 18th line and 19th line, their understanding of "dementia and depression" remained insufficient, better to report more data on this in this part

   **Answer:**

   The sentence has been modified in the revised version (page 7) to add more data and appears as follows:

   The elderly demonstrated satisfactory understanding of the effects of social interaction (items 34 to 35) as well as solitary life (items 36 to 38), with accuracy rates of 78.2% and 64%, respectively. However, the elderly showed insufficient understanding of dementia and depression, obtaining an accuracy rate ranging from 32.7% to 58.2%.

**Level of interest:** An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests

Reviewer's report:

Title: Status and influencing factors of health behavioral knowledge among the elderly in China: A community-based cross-sectional study

Version: 2 Date: 11 March 2013

Reviewer: wenjun ma

Reviewer's report:
The authors described the knowledge of healthy behaviors for the elderly in four Chinese communities. In general, it is helpful for policy maker to form community based intervention policy. However, the manuscript has large room to be improved.

- Major Compulsory Revisions

1. Introduction: The authors should clarify why they do this study based on a critical review. What is the novelty of the study? Why the authors emphasize the association between the elderly and their children? How do you think the theory of KABP (knowledge, attitude, belief and practice) in behavior change.
Answer:

The authors should clarify why they do this study based on a critical review. What is the novelty of the study?

Thank you for carefully and patiently reviewing of our manuscript. Before we did the research and during the process of writing this article, we reviewed Pubmed, Web of science, CNKI and VIP database. Limited information is available on health behavior knowledge among elderly. Many studies only contain part of the health behavior knowledge problem. The overall characteristics of health behavior knowledge of the elderly are not listed. Innovation of this study include: the questionnaire based on the concept of health behavior, evaluation of health behavior knowledge levels of the elder people, and new insight to its effectors. In addition, the relationship between elder people’s health behavior knowledge and living together with their children was also investigated. Reference information are provided for stem family to conduct the health education to the elderly (more information, see the abstract part).

Why the authors emphasize the association between the elderly and their children?

We have addressed this comment on page 3 and page 4 (the last 4 paragraphs of background part). In the stem family, the elderly and their children have similar life behavior and habits, but they may have different understandings of health. We
emphasized the relationship between the elderly and their children to know whether it was important to give health education to elder people's children while impart health knowledge to the elderly in the stem family. Moreover, stem family still occupies a certain proportion in China, and enhancing the interaction of health knowledge between family members may improve the elderly's health knowledge and change their health behavior more effectively.

How do you think the theory of KABP (knowledge, attitude, belief and practice) in behavior change.

KABP is one of the mature modes that related to health behavior change. It emphasizes that behavior change is the goal while knowledge underlying behavior change, and belief and attitude promoting behavior change. There is a causal relationship between knowledge, attitude and behavior. When knowledge rises to the belief, it is possible to change behavior. Although health belief model and the theory of phase change are different from theoretical basis of KABP, they also imply that knowledge, beliefs, behavior change is a progressive process during health behavior change. So we think KABP is the important theory of health behavior change, which plays an important role in guiding for implementing health behavior intervention.

2. Method: this section has a great room to be improved. What is the sample size? How do you calculate it? Please describe the sampling
protocol in detail? How do you randomize the sample? Is the sample representative? What is the response rate of the sample? Why do you think score 24 is adequate for health?

Answer:

☐ What is the sample size? How do you calculate it?

The sample size is 1207 and now described on page 4 (the first paragraph of methods): In accordance with the principle of sample size estimation, the sample size obtained was slightly greater than that obtained by simple random sampling (formula: \( n = \frac{\alpha^2 PQ}{\delta^2} \) [17]. \( \alpha \) was set at 0.05; \( p = 60\% \).

According to the goal of the National Health Promotion Project for Hundreds of Millions of Chinese Farmers (NAHPF): health promotion was health knowledge awareness reached 60% ~ 80%, \( \delta = 0.05 \) P, Response rate was set at 85%. The sample size was determined to be 1024.” Added 10% of the sample, the sample size was 1126. If each neighborhood or village had 150 older adults, then we needed total of eight neighborhoods or villages (1200 people).

☐ Please describe the sampling protocol in detail?

For the sampling protocol detail, we added it on page 5: The sampling was based on the GDP level of Zhejiang province and Jiangsu province of recent years. The GDP of the two cities (Wenzhou and Nantong) are in the average. In each urban district, poor and good economic areas were selected based on
Wenzhou and Nantong statistics from 2010. We selected a street in each area by simple random sampling. Using the same method, we chose a street from an urban and rural community. Each community was selected using this technique to select a neighborhood or a village. Four neighborhood committees and four villages were finally selected. Elderly people residing in these areas were investigated.

☐ How do you randomize the sample?
We sampled randomly.

☐ Is the sample representative?
The information was added in the methods on page 5: As urban centers with fast economic development, Wenzhou City and Nantong City have seen a rapidly growing immigrant population in recent years. In Wenzhou, the immigrant population comprises more than 30% of the city population. The corresponding percentage in Nantong is 15%. The immigrant population primarily originates from the following regions of China: Southwest China, Northwest China, Northeast China, and Central China [25–26]. In the present study, the samples include the original local elderly and the immigrant elderly, which can represent to a certain extent the health behavior knowledge of most elderly people in China.

☐ What is the response rate of the sample?
We have revised in our manuscript the response rate of the sample(see page 7):”A total of 1,281 questionnaires were distributed, of which 1,271
were returned. There were 36 questionnaires uncompleted, 28 elderly people gave up halfway in answering the questions. Among the returned questionnaires, 1,207 were considered valid responses (The effective rate was 94.2%).”

□ Why do you think score 24 is adequate for health?

We added all the information that was available to address this comments on page 6: There have no uniform classification standard for whether old people have adequate health knowledge or not. ” The total score of correct answers ranged from 0 to 38 points. The National Health Promotion Project for Hundreds of Millions of Chinese Farmers (NAHPF) [30] reported the overall goal of health promotion was a basic health knowledge awareness in rural eastern, central and western region reaching 80%, 70% and 60%, respectively. Considering the characteristics of low literacy of the aged in China and the minimum goal of NAHPF, In the present study, the cutoff score distinguishing adequate versus inadequate health behavior knowledge was set at 24 (more than 60% correct answers). Respondents with a cutoff score (i.e., mastering more than 60% of all health knowledge) or above were considered to have adequate health behavior knowledge, whereas those who earned a score below the cutoff score (i.e., 23 or fewer correct responses) were considered to have inadequate health behavior knowledge.”
3. **Results:** I think Fig1 and Fig2 are not necessary because you need not show the proportion for every question. Is it appropriate to analyze all different types of knowledge(sleep, injury,diet,etc) in one paper? Could you only focus on one of these in this paper because it is difficult when you analyze the related risk factors.

**Answer:**

We wouldn’t consider Figure 1 and figure 2 are not necessary,because they showed the proportion of each question. Only even term of questions to the corresponding number of entries were not marked, which we already identified in the revised version. In addition, the questionnaire was designed by definition of health behavior. The definition of health behavior includes daily health habits (nutrition, sleep, exercise, health, etc.), health behavior (regular health checks, actively seeking medical advice, etc.), preventive behavior (avoiding environment and events with negative health effects), changing in harmful health behavior (to discontinue smoking, drinking, etc.). Although the questionnaire included different kinds of knowledge (injury, diet, sleep), but they are the contents of the definition of health behavior, we use them to reflect the whole status of health behavior knowledge of elderly people.

4. **Discussion:**

5. **English writing** is not satisfactory and logical.
**Level of interest:** An article of limited interest

**Quality of written English:** Not suitable for publication unless extensively edited

**Answer:**

The revised manuscript has been proofread by a subject expert editor and approved by a senior editor. All the editors are native English speakers (please see additional file 2: Certificate of English Editing).

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

No

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**Additional material submitted by the reviewers:**

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**Major Compulsory revisions**

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1. Is the question posed by the authors well defined?

Abstract: It is not clear to me what exactly was the research problem. In other words, why do we need this research?

**Answer:**
We revised three questions that our research mainly covers as depicted on page 6: the elderly, health behavior and knowledge. We have defined “health behavior” and “knowledge” in the article. The word "elderly", referring to people aged 60 and above in developing countries and the Asia-Pacific region according to WHO[27]. Because limited studies are available on health behavior knowledge among the elderly and the interaction between the elderly and their children living with them. Using a survey of the elderly in a community and their children living with them, we explored the characteristics that determine health behavior knowledge. We also identified the influencing factors affecting such knowledge. The relationship between the health behavior knowledge of the elderly and that of their children was also investigated.

2. Are the methods appropriate and well described?

In Study design, the expression of the cloning Bach coefficient was incorrect.

In Data analysis, PASW changed into SPSS.

In page 7 of Status of health behavioral knowledge among the elderly, Of the 24,575 participants Was incorrect.

**Answer:**
The reviewer is correct and we have changed "cloning Bach coefficient into "the internal consistency measured with the Kuder–Richardson Formula 20"(see page 5, the 2nd paragraph of study design).

"PASW “has been changed into “SPSS14.0” in the revised version(see page 6, the 1st paragraph of data analysis).

We are sorry that there was an error in the previous version, i.e. of the 24,575 participants should be of the 575 participants, which has been corrected in the revised version(see page 7, the 2nd paragraph of results).

3. Are the discussion and conclusions well balanced and adequately supported by the data?

I have an impression that the data could be more thoroughly/deeply discussed. What I miss is a discussion on the consequences of the findings for the existing theories/practice. In the present version of the manuscript the previous findings are simply summed up without relating the new findings to the existing ones.

**Answer:**

The 2nd version of our manuscript only reviewed former discoveries, and didn't associated with the existing latest findings. now We have added supporting data combined with the latest findings in the discussion and conclusions parts. They were highlighted in red in the background, discussion and conclusions sections.
4. Are limitations of the work clearly stated?

There were no report of limitation in the study.

**Answer:**

The limitations were stated in the last paragraph of discussion in the 2nd version of our manuscript. Now we made some changes and moved it after the conclusions in the revised version.

3. Are the data sound?

The data were sound.

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**Minor Essential Revisions**

1. Does the manuscript adhere to the relevant standards for reporting and data deposition? Some guidelines for data and analyses reporting (e.g., CONSORT) could be consulted by the authors in order to improve the quality of the manuscript.

2. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

   Yes.

3. Do the title and abstract accurately convey what has been found?
The title and abstract accurately conveys what has been done.

4. Is the writing acceptable?

Needs some language corrections before being published.

**Answer:**

The revised manuscript has been proofread by a subject expert editor and approved by a senior editor. All the editors are native English speakers (please see additional file 2: Certificate of English Editing).

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**Other revisions:**

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1. Title: We changed “influencing factors” into “determinants”, because "Determinants" is the same as "factors" without the need to attach the "influencing..." part, so it is shorter and more readable. We also changed “health behavioral knowledge” into “health behavior knowledge”, so it is more reasonable.

2. Abstract: Page 2, we changed “(score >24)” into “(score ≥ 24)” in the results part to be more reasonable. Some changes were also made in the conclusion part of abstract.

3. Background: Page 3, we added 2 sentences to the 2nd paragraph: “Research shows that falls among the elderly are avoidable to a certain
extent [9]. Some elderly people realize the risk of falls but have limited knowledge on how to prevent them, whereas others are not aware of the risk factors [10].

4. Methods: Page 5, we added a paragraph: “Our study combined centralized surveys with in-home interviews. We interviewed every elderly person to obtain data after the elderly had undergone physical examination, which helped improve the efficiency of our investigations. Our investigations and physical tests were conducted by medical personnel, community health workers, and junior students”, and changed “The elderly people and their children were surveyed to assess the difference in understanding of health behavioral knowledge between” into ”The elderly people and their children were surveyed to determine the difference in health behavior knowledge between the former and the latter”.

5. results: Page 8, According to the results of Table 2, we changed” Age, living companions, marital status, educational level, previous occupation, chronic diseases, and residential factors were closely related to health behavioral knowledge among the elderly (P value < 0.05), as shown in
Table 2.” into “Except gender and chronic diseases, age, marital status, educational level, previous occupation, living companions and residential factors were closely related to health behavior knowledge among the elderly (P value < 0.05), as shown in Table 2.” Page 9, we added some data of figure 2.

6. Discussion: Page 9-page 11, we added some new findings in this part. Such as: “Since 1953, the government of the People's Republic of China has implemented disease prevention programs as the focus of health knowledge promotion. In the past 20 years, the government and the Department of Health Education have provided sufficient attention to health education as well as healthy behavior and lifestyle. Thus, most people have acquired adequate knowledge of the components that complete a healthy lifestyle [2]. Inadequate orientation to healthy habits and lifestyle lead to poor understanding of the importance of using appropriate amounts of cooking oil and salt in preparing food, realizing the benefits of appropriate intakes of vegetable, fruits, and liquids, as well as recognizing symptoms of common mental disorders. Thus, these aspects of health knowledge should be the focus of future efforts in health education and “In the present study, the comparison of the health behavior knowledge between the elderly and their children indicated that both groups exhibited a tendency to improve their health behavior
knowledge. For example, the elderly possessed adequate health knowledge of the factors that induce falls, as well as the importance of daily health habits, regular diet, and daily exercise. The elderly were also aware of the dangers of smoking, importance of social interaction, and effects of living alone (with an accuracy rate above 80%). However, their knowledge regarding the following must also be strengthened: appropriate amounts of oil and salt used in food preparation; intake of fruits, vegetables, and liquids; and symptoms of early depression (with an accuracy rate below 40%). Family interaction regarding their collective health knowledge also contributed to the improvement of health behavior knowledge. Living in the same environment over a long period of time allowed the members to subtly influence one another.”

7. Conclusion: we made some changes, see page 11 and page 12.

8. References: some references were added, see page 13 to page 15.

9. In the revised manuscript, we checked the data again and made some changes. In table 1, table 2 and table 3, the data about "chronic diseases" has been changed, which were highlighted in red. We have changed in the results and conclusion sections related to"chronic diseases". In general, these changes have little impact on the results and conclusion of the entire article.