Author's response to reviews

Title: Lifestyle and Health-related quality of life: a cross-sectional study among civil servants in China

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Version: 6 Date: 29 February 2012

Author's response to reviews: see over
Dear Editor,

Thank you very much for the message concerning our manuscript "Health-related quality of life of civil servants in China: association with lifestyle measured with short form 36 scale" (MS: 1071562772637219). We have revised our manuscript according to the comments and suggestions of reviewers, and responded point by point to the comments. We also have a native English speaker proofread the manuscript. We hope now everything is in order and our manuscript is ready for publication.

With kindest regards.

Sincerely yours,
Jun Xu

Reply to the reviewer 1 (Dong-Sheng Tzeng):

Major:
1. How the author prevent the selection bias for the subjects of five regions in the sampling method?

   This was a cross-sectional survey of a random sample of civil servants selected from five regions (North China, South China, Central China, Northwest China and Northeast China) in China. The sampling method was based on a stratified random sampling approach. These five regions represent typical level in respect of the regions scale and geographical distribution. North China, South China and Central China are greatly developed. Northeast China is moderately developed. Northwest China is underdeveloped. Overall, these five regions are typical and representative. Therefore, the survey from these regions could well represent the HRQoL status of civil servants in China. Provincial, municipal, county, town and village affiliation were randomly selected in five regions. All the participants were 18 years or older. Proportionate allocation sampling was used to identify a sampling fraction for each district, age segment and gender (male/female=2/1).

2. Smoking was adverse relative to PCS but not MCS and TS. To this study, why?

   It has been agreed that smoking can physically cause harm to human health. The more smoking the greater damage to the health, causing lower PCS scores. Therefore, smoking was adverse relative to PCS. While smoking can relieve psychological pressure and reduce depression to a certain degree, positively correlated with MCS. Thus, the positive correlation between smoking and MCS may offset the negative correlation between smoking and PCS. As PCS plus MCS equals TS, smoking was positively relative to TS.

3. How SF-36 is better than WHOQoL-BREF, QOL-CS or DQOL in the discussion?
Many measurement tools are used for the HRQOL surveys. However, there are two basic approaches, generic instrument and specific instrument. The SF-36 scale and WHO Quality of Life-BREF scale are generic instruments. These scales reflect conditions of the overall quality of life for the general population or patients. While the Quality of Life-Cancer Survivors (QOL-CS) scale and Diabetes Quality of life (DQOL) scale are disease-specific quality of life measurement scale. Because our subjects are general population, we believe that it may be better if we choose the SF-36 scale or WHO Quality of Life-BREF scale. Many studies used a comprehensive well-validated instrument, such as the SF-36 scale, to evaluate HRQoL among general population \cite{1-3}. What’s more, the 36-item short form (SF-36) is one of the principal tools to measure HRQoL \cite{4}. Therefore, we consider the SF-36 is better than WHOQoL-BREF, QOL-CS or DQOL.

Reference:

4. What are the limitations in this survey?

In this study, the performance of the questionnaire in large scale survey is satisfactory and provides a large picture of Health-related quality of life of civil servants in China. However, several limitations need to be taken into account when interpreting our findings. Firstly, our results based on the data from five regions in China might not be applicable to other countries. Secondly, the study design was cross-sectional and it is hence difficult to establish cause-effect relationship between health-related quality of life and lifestyle factors. A longitudinal study is needed to investigate the relationship in the future study.

However, Despite these limitations, the results of our researcher provide a large picture of health-related quality of life of civil servants in China, which may facilitate further investigation by using a prospective study design.

Minor:
1. In Table 1, there are many missing value, the author did not discuss the reason, why?

Missing of values is normal. We tried to supplement the missing information after the survey ended. But the survey was anonymous and respondents refused to disclose the answer to the questions, it was difficult to fill the missing value.

2. In Table 2: MH is belonged to PCS? GH is belonged to MCS?
Yes, MH is belonged to PCS. GH is belonged to MCS.

3. In Table 3 & 4, how did they define these different drink group (Never, a little, a lot) and different group……?

   Different studies used different units to gauge alcohol intake. In our study, alcohol consumption was converted into grams of ethanol per day using the following conversion factors: 1 drink = 12.5 g; 1 ounce = 28.35 g; and 1 ml = 0.8 g \[^{[1]}\]. A little alcohol drinking group was defined as consumption of 1–3 drinks/day (12.5–49.9 g/day of alcohol), and a lot alcohol drinking group was defined as consumption of 4 drinks/day (50 g/day of ethanol). We have added details to our Materials and Methods.

Reference:

4. Why MCS had significant difference between smoke group and non-smoke group (Table 4), but smoke did not have significant effect to MCS by multiple stepwise linear regression analysis (Table 5).

   Variables that do not have significant difference in univariate analysis may have significant difference in multiple stepwise linear regression analysis; and variables that have significant difference in univariate analysis may not have significant difference in multiple stepwise linear regression analysis. Because when the variable combination in regression equation changes, some important variables in univariate analysis may not have significant difference in multiple stepwise linear regression analysis \[^{[1]}\].

   Therefore, MCS had significant difference between smoke group and non-smoke group (Table 4), but smoke did not have significant effect to MCS by multiple stepwise linear regression analysis (Table 5).

Reference:

5. Why PCS and MCS had significant difference between different Sedentariness using groups (Table 3 & Table 4), but Sedentariness did not have significant effect to TCS & MCS by multiple stepwise linear regression analysis (Table 5).

   Please refer to our response to question 4.

6. Why PCS had significant difference between different work time groups (Table 3), but work
time did not have significant effect to MCS by multiple stepwise linear regression analysis (Table 5).

Please refer to our response to question 4.

7. Why did the author define these lifestyle factors to so many groups?

The reasons for defining these lifestyle factors to so many groups are that we may not only analyze the different levels, different times, different grades and different kinds of the data as many groups as possible, but also get more details out of these groups.

8. How did they select these lifestyle factors?

Many studies have shown that lifestyle factors, such as smoking, drinking alcohol, having breakfast, sleeping time, physical exercise, and so on\(^1\) to \(^4\) have effects on peoples’ health.

Reference:


9. Is there any association between these lifestyle factors, such as smoking, drinking alcohol, having breakfast, sleeping time, physical exercise, work time, operating computer and sedentariness? Ex: If someone has less sleeping time or more work time, he may not eat breakfast.

Good point. There are some association among these lifestyle factors, such as smoking, drinking alcohol, having breakfast, sleeping time, physical exercise, work time, operating computer and sedentariness. In this study, due to a variety of reasons, it was difficult to guarantee an identical baseline of each group. If peoples’ sleeping time and work time were not consistent, the confounding phenomenon may appear. However, these problems can be dealt with by using the regression analysis. Because introducing the confounding factors into the regression equation is a simple way to control confounding factors. In this study, we used multiple stepwise linear regression to control the effect of confounding factor.

10. Did these lifestyle factors affect Health-related quality of life (HRQoL) directly or indirectly?
Some studies have shown that lifestyle factors, such as smoking, drinking alcohol, having breakfast, sleeping time, physical exercise, and so on [1-4], have strong association with HRQoL. However, none of them definitely indicates that these lifestyle factors affect HRQoL directly or indirectly. We cannot say for sure whether these lifestyle factors affect HRQoL directly or indirectly.

11. Is there any confounding factor in these lifestyle factors?

Yes, there might be some confounding factors in these lifestyle factors. However, we used multiple stepwise linear regression to control the effect of confounding factor.

12. Type errors: page 3, in the formula, p or #? page 22, line 22 "of" or "0f"?

Sorry for the typo. We have corrected them.

Reply to the reviewer 2 (Helene Sandmark):

1. Is the question posed by the authors well defined?
   No it is unclear and there are methods parts involved in the purpose writing. The objective needs to be clarified and the analytical part of the study properly expressed at the end of the Background section.

   We have revised our manuscript and clarified the objective, removed the methods parts involved in the purpose writing and properly expressed the analytical part of the study at the end of the Background section.

2. Are the methods appropriate and well described?
   Methods are described in the Background section and need to be removed. In Methods there are formulas that could be removed and referred to instead. There is a lack of a strategy in the selection of the participants.

   We have removed the methods that are described in the Background section. We also removed the formulas and cited some references. We have added the strategy in the selection of the participants.

3. Are the data sound?
   This needs to be further presented in the study report. Ethical approval to conduct this study it is not reported and needs to be added.

   We have added the Ethical approval in the study.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   The reporting of the data has to be improved. In its present state it is not possible to review the
paper properly. The Abstract is unclear. The section Statistical analysis should be extended. In the Discussion section the results need to be better connected to findings from earlier, similar, studies.

We have revised the manuscript by making the abstract more clear, extending the Statistical analysis and connecting the results in the Discussion to others' findings.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   See nr 4!

   We have revised our manuscript accordingly.

6. Are limitations of the work clearly stated?
   No, there is a lack of this.

   We have clearly stated the limitations of the work in the Discussion.

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

8. Do the title and abstract accurately convey what has been found?
   The title is unclear and the abstract have to be rewritten (see above).

   We have rewritten our title and revised our abstract. The new title now reads "Lifestyle and Health-related quality of life: a cross-sectional study among civil servants in China"

9. Is the writing acceptable?
   The language and the scientific writing are not acceptable and need to be improved.
   Did you have ethical approval to conduct the study?
   The standard of the tables need to be improved and more clear.

   We have added the Ethical approval and revised the tables. The manuscript is proofread by a native English speaking with appropriate clinical background.