Reviewer’s report

Title: Oral health and prosthetic status of an urban and rural population over 40 years in Shandong Province, China

Version: 1 Date: 5 February 2011

Reviewer: Bradley Christian

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Major revisions

I. Background

1. Paragraph 1, last sentence: ‘More recent oral health outcomes such as tooth loss’ - Why is it important to describe tooth loss? Add information to this effect.

2. Paragraph 2, sentence 4: ‘Unfortunately, DMFT does not provide different dental regions in Chinese adults (end of paragraph) – In relation to these statements you need to provide more information on 1) the importance of functionality to older adults, for example, in terms of quality of life 2) Rationale for describing tooth loss by dental region.

II. Methods

1. More clearly describe how you define, ‘Urban’ and ‘Rural’.

2. How was the sample size calculated?

3. Do you think the convenient sub-sample could have induced a bias in the study, especially since it was drawn from a health care centre, where as the remainder of the urban sample was randomly selected from the general urban population? This is a very important issue to address.

4. ‘For the rural sample….basis of accessibility’ – 1) You need to mention the criteria that were used to assess the representativeness of this county and 2) rural was defined on the basis of accessibility to what?

5. Mention the reason for selecting rural villages based on GDP.

6. Was the questionnaire a self-administered or interviewer-administered questionnaire? You mention ‘face to face interview’ in the text (which hints at it being interviewer-administered) and immediately following that you mention self-administered. If it was an interviewer-administered questionnaire, then the correct term to be used is ‘self-reported’ and not self-administered. More clearly explain this in the paper.

7. Was the questionnaire piloted before the survey? This is an important step in questionnaire development and should be addressed in the paper.

8. Socio-economic status is not a demographic variable. Correct this in sentence 6 of the section ‘Interview and clinical examination’.
9. You mention inter-observer reliability tests were conducted. What about intra-observer reliability?

10. In the data analysis section you need to more clearly describe the logistic regression analyses. A logistic regression is conducted to identify an independent effect on the outcome variable i.e. the effect on the dependent variable by a particular independent variable after accounting for all other independent variables in the model. In relation to this procedure you also need to mention the process for selecting variables in the logistic model, such as, forward, stepwise, backward, or other selection methods.

III. Results

1. Paragraph two belongs in the ‘Methods’ section.

2. Logistic regression results (adjusted odds ratios) are usually presented along with the unadjusted odds ratio (OR), so as to help the reader get an idea of the change in magnitude of effect, when all variables are included in the model.

   Table 4, I assume are the adjusted logistic data, as you call it a logistic regression table. If it is the case, then it would be more useful to also include the unadjusted odds ratios, where each exposure variable has been analyzed in terms of the outcome variable by itself and not with other model variables.

3. Table 5 would be more useful, if you show the actual values and not just the difference in scores. The actual proportions would be of more use than the 95 % CI and p-value.

4. Section ‘Teeth replaced’, last 2 lnes of paragraph 1 , where is this information in the tables? If it is not shown in the tables, you should add a note to this effect.

5. Why is the percentage of dentate subjects with missing teeth different in Tables 3 & 6?

IV. Discussion

1. Most of the 1st paragraph belongs in the ‘methods’ section.

2. Again Socio-economic variables are different from demographic variables. Please correct this in paragraph two.

3. Again, paragraph 4 is a ‘methods piece’ and is nothing to do with a discussion of your results.

4. Give comparisons supported by numerical data, for example, in the 1st sentence of paragraph 5 you state that “For a long time…..than in rural areas (12)” – give the actual number(s) that you are referring to, from this study (12), to support your statement and also for comparison to the findings from your study.

   Similarly, in the next few sentences you mention comparable outcomes with other studies but do not provide the numbers that you are referring to. Providing the results from these other studies is necessary to make the comparison with your study.

5. Paragraph 5, “The combination of high….for caries in rural areas” – What is the rationale behind this statement. It is a well-known fact that in old people,
more teeth are lost due to periodontal disease than dental caries. So the sentence should be modified to something like “extraction is the main treatment for advanced tooth diseases in rural areas”.

6. Paragraph 5, “This might be because….rural region” – The word ‘preventive’ should be added before ‘dental care’ (‘accessibility to preventive dental care..’). The fact that teeth are being extracted indicates access to dental care, but the low proportion with fillings indicates lack of preventive care.

Another reason for the low number of fillings in rural areas could be cost of care rather than access issues. If more low SES persons reside in rural areas then for them the more affordable treatment would be extraction rather than a more expensive filling (which might require multiple sittings).

7. A major part of the result was analysis by demographic and SES variables (logistic analysis), none of which have been discussed much. Also, there is no discussion related to the result of the analysis by dental region. These need to be addressed.

V. Conclusion

In the conclusion you need to address every aim that you have mentioned in the ‘background’ section. For example, one of your stated aim is ‘to determine influence of various demographic…and tooth replacements’ – in the conclusion you only mention the demographic variable (urban-rural), what about the other demographic and SES variables? All these need to be mentioned in the conclusion.

Similarly you have not addressed the last aim (WHO goal) in the conclusion.

General comments/Minor revision

1. In the title, the term ‘Oral’ should be replaced with ‘Dental’ as this study focuses only on teeth. Oral health is too general a term to be used in this study.
2. The aims of the study should be uniformly stated in the abstract, background and discussion. The ‘Conclusion’ should address each of the mentioned study aims/purpose.
3. Methods section of abstract needs more information.
4. Results section of abstract has no information on prosthetic status.
5. Errors in word spelling.
4. Results section text is very lengthy. Only main results should be mentioned in results text, the rest is evident from the tables.
5. The purpose/aims of the study need to be more clearly stated/well defined, particularly in the background section.

**Level of interest:** An article of importance in its field
Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests.