Reviewer's report

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

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Reviewer: Hossein Hessari

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General comments
1. The paper has some information about the oral health and prosthesis status of two urban and rural populations aged 40 or more. The title can be changed, since there are two populations. It is also a long title.

2. Oral health is a general term and is not confined to dmft and prosthesis status. Dental health is preferred.

3. The language of paper is poor and must be improved before any further decision. The text lacks some basic rules for scientific writing. The tense of verbs should be in past.

4. The study type is cross sectional, and using words like risk, increase or decrease, influence, effect etc. is not allowed. These words are specific to case-control or other types of studies. The text should be revised accordingly.

5. Please, be consistent. Please either "resident" or "citizen". The complete name of variable is "place of residence", so avoid residence.

Abstract
1. In the method part of abstract the details of variables were not explained.
2. The reason and benefits of showing the results based on jaws are not clear.
3. The index is DMFT and should be written in the correct form all over the text.
4. Tooth replacement is not clear. In methods, nothing is indicated in this regard. What index was used by the authors, how was measured.

5. In the results part, the following sentence is not clear: "The number of decayed teeth was relative low at all ages, however, an increase with age was noted for anterior teeth." The word relative is not clear; in the results clear findings of the study should be brought. The word "however" is not suitable. In the results, the text should not explore any feeling regarding the findings; and finally using the word increase is not correct, since the study is cross sectional, and the authors did not study a cohort to follow the increase or decrease or the changes through the time.

6. In the results, especially in the abstract, the reader expects to see the
numbers and digits to compare the findings. Please avoid using words like low or high without the numbers and P-values.

Background

1. The first two sentences are not necessary. Please start the background with the importance of dental caries and tooth replacement in adults.

Method part

1. Page five, line 11. Please mention the number and percent of subjects who did not show up.

2. It was not clear to me why the urban and rural subjects were selected according to different criteria? And also, was the GDP data, really, available for each village? The authors could arrange the villages according to the GDP list and select the required villages randomly from high to low.

3. Page 6, line 13-15. ..dental assistant. If needed, they read …, and if applicable,

4. Instead of location of residence, place of residence can be used.

5. The results part should be rewritten based on two rules: tenses should be changed to past, and the cross sectional entity of the study.

6. Page 9, last paragraph. The OR =1.018 with p-value = 0.001, is strange to me. OR =1.018 is equal to OR = 1.0 and is meaningless.

7. The reason and benefits of showing the results based on jaws are not clear.

8. The reason and benefits of showing the results based on regions are not clear.

9. About the R index, what is the reference for the index?

Results Part

1. Number of tables and figures is high, and is boring for the reader.

2. Table 3. Header: Percentages of dentate subjects (n=1525) with decayed, missing, and filled teeth- Please indicate to the total number of subjects in headers of tables.

3. The values for percentages could be rounded to make a simpler image for the reader, in all tables.

4. No trend can be estimated in the cross sectional studies, and subsequently the whole text should be revised accordingly.

5. A long table (Table 2) has shown the SES classification details; however no sign of SES was detected in the results or was not prominent.

6. Table 6. The header and the explanations in the rows should match. "Potential and realized tooth replacement" do not address Mean number of teeth (SD) suitable for replacement, and Mean percentage (SD) of teeth replaced. By the way, the values should be similar to be compared by the reader. One column is in number and the other is in percentage.

7. Please avoid reporting the percentage values in approximate, and bring the exact values in the results. For example in page 12: ‘dentitions’ comprising 20 or
more teeth at old ages increased from less than 60% up to 80%. "Old ages" is not defined before; please use unique format for reporting the age variable. You can use the age classification you have defined in the method part in all tables and figures. "Less than 60%" is not clear; you can indicate to exact (rounded) percent.

Discussion Part

1. Many points have been discussed in discussion, that nothing was reported about them in results.
2. On the other hand, lots of data have been reported, that nothing was indicated about them in the discussion. The discussion is a continuum of results and should highlight the important parts of results.
3. The language of discussion part is poor and should be revised.

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

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