Reviewer’s report

Title: Number of natural teeth, denture use and mortality in Chinese elderly: A population-based prospective cohort study

Version: 3 Date: 28 Oct 2019

Reviewer: Tatsuo Yamamoto

Reviewer's report:

General comments:

This prospective cohort study evaluated association of the number of teeth and denture use with all-cause mortality in Chinese older people, and found that tooth loss was associated with an increased risk of mortality and denture-use provided a protective effect against death. The topic is interesting for the readers of this Journal. The statistics used are appropriate. The followings are concerns that should be addressed.

Specific comments:

Abstract

1. Page 2, lines 3-12: The purpose of the present study should be added in the Background.

2. Page 2, lines 13-19: More information such as age of the subjects, and dependent and independent variables and covariates of the Cox proportional hazards model should be added in the Methods.

3. Page 2, lines 20-43: The contents in the Results need to be shortened because those in the Methods will be increased.

4. Page 2, lines 47-49: The sentence "The optimal number of natural teeth was ≥ 25." seems to be misleading. Some explanation should be added; or the sentence should be deleted.

Introduction

5. Page 3, lines 3-7: The sentence should include references.

6. Page 3, line 26: The words "Tooth loss, denture use" should be "Tooth loss and denture use." The manuscript should be proofread by a native speaker of English.

7. Page 3, line 33: Because the meaning of "optimal teeth number" is unclear, explanation should be added. A study (Fukai et al., Geriatr Gerontol Int. 2011) using the words "critical tooth number" might help the definition of the "optimal teeth number."

8. Page 3, lines 42-46: The sentence should include references.
9. Page 3, lines 52-58: The purpose of the present study other than "to address limitation of the previous study" should be provided.

Methods

10. Page 4, line 9: Outline of the survey should be provided. For example, is it a questionnaire survey or interview survey? If the survey was conducted by questionnaire, is it mailed?

11. Page 4, lines 28-32: How the informed consent was obtained?

12. Page 4, lines 38-41: The sentence "In the first wave, all participants were newly recruited so all were included." should be revised because it seems like spoken language not academic sentence. Page 4, line 45: The word "analysis" should be "analyze."

13. Page 5, lines 1 to 5: Some explanation of the words "natural teeth" should be provided. Does the natural teeth mean intact teeth? Or, does it include filled teeth?

14. Page 5, lines 1 to 5: Some explanation of the words "false teeth" should be provided. Does it include only removable dentures? Or, is it include crowns and/or bridges?

15. Page 5, lines 1 to 5: The authors should discuss validity of self-reported number of natural teeth and denture use because education time of the more than half of the study subjects was zero and about one third of the subjects were cognitively impaired.

16. Page 5, lines 1 to 5: The following information might help readers to understand characteristics of the study population. For example, comparison of the data of the mean number of teeth present and percent of people using denture between the subjects in the present study and national survey might help readers to understand generalizability.

17. Page 5, line 31: The sentence should include references.

18. Page 5, line 35: How was the information of fresh fruit intake and vegetable consumption collected?

19. Page 5, lines 45-58: How was the information of covariates collected?

20. Page 6, line 4: The words "number of teeth" should be "number of natural teeth."

Discussion

21. Page 10, lines 18-21: The sentence needs revision because of the grammatical error.

22. Page 12, lines 5-12: The sentence "This maybe because more tooth loss could have a more severe influence on the masticatory function and nutritional status, which in turn, been linked to overall morality." contradicts the fact that BMI was not associated with mortality in Additional Table 2. These results should be discussed.
Table 1

23. Data for the number of total subjects for each variable should be provided.

Figure 1

24. The words "Teeth number" should be replaced with "Number of natural teeth."

Additional Tables 1-3

25. Number of subjects used in the analysis for each group should be provided.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Unable to assess

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Not suitable for publication unless extensively edited
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal