Reviewer’s report

Title: The effect of missing teeth on dementia in older people: A nationwide population-based cohort study in South Korea

Version: 0 Date: 13 Dec 2018

Reviewer: Mohammed Alakhali

Reviewer’s report:

1. In the abstract (43 page 2) the conclusion stated "it is important to delay tooth loss and preserve residual teeth to help prevent dementia". The statement is generalized and not accurate because it was showed later in your study (297 page 21) that a history of periodontal treatment was associated with increased tooth loss but also with a significantly reduced risk of dementia so in such situation extraction of periodontally compromised teeth will reduce risk of dementia which reverse the conclusion so it is better to state in conclusion as the following "preserve the stable remaining teeth to help prevent dementia" instead of preserve residual teeth to help prevent dementia

2. Why the study limited the including criteria to the older people over 60 years (86 page 4), I think it was realistic to include also younger age group because dementia within old age people might be affected by the age themselves.

3. Why it was to rule out extraction of the third molar due to pericoronitis from including criteria of the study? (247 Page 19)

4. Does the stage of periodontitis affect the dementia?

According to the latest classification of periodontal disease on 2017, all subjects whose loss their teeth because periodontitis should be diagnosis as periodontitis stage III or IV where, if they lost \( \leq 4 \) teeth it is consider periodontitis stage III, and if they lost \( \geq 5 \) teeth it is consider stage IV periodontitis.

According to the above information, Could you determine the percent of patients have periodontitis stage III affected by dementia and similarly periodontitis stage IV patients affected by dementia?

5. Did the study took the systemic diseases into consideration that may affect the relationship between dementia and tooth loss

6. One is that dementia is a contributing risk factor for tooth loss, and another suggests that tooth loss is the leading factor for dementia. According the findings of your research which theory this study supports? (283 Page 20)

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

Yes

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

Yes

**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 am able to assess the statistics

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

Acceptable

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