Reviewer's report

Title: Relationship between Bone Mineral Density and Remaining Teeth and Its Related Physiological Factors in Postmenopausal Women

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Reviewer: Ok-Su Kim

Reviewer's report:

This manuscript presents a study which does two things. First, it assesses relationships between bone mineral density (BMD) and tooth loss. Second, it assesses to identify the risk factors for BMD and tooth loss in Korean postmenopausal women.

While there are some positive elements (reasonably large study, prospectively recruited), there are some important weaknesses.

There is much evidence in the literature about association BMD or osteoporosis and periodontal attachment loss or tooth loss.

So, why have you done this work? You do not explain in the introduction why you want to repeat previous research and how it can add to scientific knowledge.

There is a recent article for association BMD and tooth loss in a Korean population “The association between periodontal disease, tooth loss and bone mineral density in a Korean population” (2104, JCP). There must be some reason, e.g. the existing research has important problems or risk of bias, or the characteristics of the study subjects involved may not be representative of all populations. Please elaborate with appropriate references.

- Major Compulsory Revisions

1. Title: remaining teeth is not proper, change to tooth loss

2. Abstract:

background: first sentence is repeated in introduction. Recommend omit or replace other sentence.

Conclusion: What is the meaning of special care?

As osteoporosis affect on tooth loss, you describe the care for osteoporosis would be preventive for tooth loss.

3. Introduction:

1) Second phrase(p4, line 92): “estrogen deficiency causes gingival inflammation”. This sentence is not proper. This sentence means estrogen deficiency is direct cause of gingivitis and periodontitis. Please explain the possible mechanism
2) Third phrases (p4 95 line) some studies -# change many studies. You should know the work of the OSTEODENT project.

3) line 108, no cross sectional study is not correct, should be changed.
4) remaining teeth -# change the number of teeth, or number of teeth present

4. Methods:
1. Assessment of bone mineral density.
   What reference data were used for the T-score?
2. Assessment of remaining teeth
   Are there any data on the cause of tooth loss?.
3. Are there any data on blood vitamin D level, calcium intake, bisphosphonate intake?
   These are important potential behavioral confounders and would strengthen the manuscript considerably.

5. Discussion.
1. line 203-205 omit the sentence.
2. p10, line 221. Under 1 year taking female hormone drugs group was higher the number of teeth and BMD than others. Please describe the explanation about this result.
3. You described the periodontal attachment loss in introduction part.
   I would like to know whether survey the cause of extraction of teeth in this study.
4. In path analysis, age is greatest effect on BMD and the number of teeth present compared to other physiologic factors.
   The effect of other physiologic factors is small. How about the clinical significance of these factors?
5. In conclusion # omit sentence

6. Conclusion.
   Last sentence ' from this poit of view, ' you should rewrite in the changed point.

7. references : You had better cite mainly to the Journal of the last 10 years .

- Minor Essential Revisions
p10, line 217 Ernst # Ernst et al.
p12. line 270 verebral # vertebral

Level of interest:An article of limited interest
**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.