Reviewer's report

Title: Age estimation in three distinct East Asian population groups using southern Han Chinese dental reference dataset

Version: 0 Date: 23 Apr 2019

Reviewer: Norliza Binti Ibrahim

Reviewer's report:

Age estimation in three distinct East Asian population groups using southern Han Chinese dental reference dataset.

1. Abstract: The conclusion is not similar to what mentioned in the results and discussion.

Result: "From six dental age calculations, few methods of DA accurately estimated the age of Filipino and Japanese subjects but overestimated the age of Thai"

Conclusion in abstract: "Based on the outcomes of this study, the southern Han Chinese reference dataset can be recommended for use on Japanese subjects, and with some reservations on the Thai and Filipinos."

Discussion: "In the Thai, whilst the age of males seems to be accurately estimated by the method, in the females it was overestimated."

The authors should mention the methods that accurately estimated the age of Filipino and Japanese.

This following conclusion should be highlighted in the abstract's conclusion:

Conclusion after discussion: "The reference dataset was shown to be the most accurate for Japanese, followed by Thai males and it was particularly ineffective for Thai females and Filipinos."

2. How can the authors ascertain ethnicity based on surnames especially in inter racial marriage?

3. The type of panoramic machines together with its magnification should be clarified because the magnification can influence the measurements.

4. Bland and Altman analysis is mentioned in the abstract but not in the methods section.
5. "Comparing differences between CA-DA, results show that the southern Chinese Han reference dataset overestimated the age of Filipino subjects"

6. Authors should mention the overestimation/underestimation values in the result section.

7. Although some paragraphs are well written, some of the sentences are difficult to understand e.g.

"In males, all the dental age calculations over-estimated the age ranging from -0.17 years (1/se-tds) to -0.27 years (se-tds)".

"Figures 2 to 4 show the variation in the difference between CA and DA (CA-DA) by chronological age in the three test samples."

8. "Regardless of the method used to estimate dental age and indicating that the southern Chinese RDS reference dataset best matches the Japanese sample (Table 4), compared to the others."

In the result section, authors should mention their results with respect to the type of method used.

The use of subheadings will make it easier for the reader.

9. Discussion: "Whether this indicates a close similarity in dental maturation between the Japanese and the southern Chinese populations due to shared population history or similar growth environments is not known." Provide reference.

10. Clarify this statement: On the other hand, population-specific methods may also be difficult to justify as application of the method across "similar"populations result in both reliable (Japanese) and unreliable (Filipino) outcomes.

11. Authors mentioned that age distribution among the samples were not equal. This could be one of the limitations of the study.

Has this limitation affected the outcome of the study? Is this a major limitation? If so, then the authors should reconsider re analyzing equally distributed samples among the 3 populations.

**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.

No

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:

Needs some language corrections before being published

**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