Reviewer's report

Title: Comparison of varying numbers of intra-oral photographs with an established visual caries examination method for use in dental epidemiological studies of children

Version: 1 Date: 25 October 2012

Reviewer: Jonas Rodrigues

Reviewer's report:

Major Compulsory Revisions

Comments to authors

Introduction:
- Please reference Boye et al. in the beginning of page 4.
- You should not include in press references without listing them at the end of your manuscript.
- In the last paragraph of the Introduction the authors state that it is common to use index teeth for epidemiological assessments, however only one paper is supporting this statement and this is about a periodontal survey. This should be better supported.

Aim

Please make your aim more concise, clear and direct, i.e. “to compare two methods of... for epidemiological surveys... in children of two age groups (5 and 10/11 y.o)...” and so on.

Methods

You used two samples of children, so this should be in the beginning of this section.

How was the mouth divided for taking 8 photographs?
I could not understand how you could see occlusal and vestibular surfaces in the same photograph, since it is only possible to see occlusal surfaces if you take a perpendicular photograph, otherwise you could lose some lesions due to angulation.

Page 7 (last par.): “Caries was detected visually...” not diagnosed.

Why did you use a dentin threshold to assess visually the lesions? I am curious to know how could you be visually sure when a small cavitation had already reached dentin. How did you do it?

Did you use mirror to take photographs? If so, this should be described in this part. If not, I think this could compromise your study, since it is impossible to take perpendicular photographs of 5 y.o mouth’s children without using a mirror.
I would like to see some of the photographs and you could also include some examples in your manuscript, at least a group of 8 of one patient.
Did you print out the photographs? Or were they all in a digital format? The “folder” you created was digital? This should be better and clearer described.

What is a presentation folder?

Statistical analysis
- First par.: “collected”

Why did you use different statistical measures to assess reproducibility? How did you calculate intra-examiner reproducibility as the 5 examiners only performed one visual examination? Or did they evaluated twice the children?
This does not make sense. Use either only weighted kappa or ICC. For inter-examiner reproducibility you can asses 1x2, 1x3, 1x4, 1x5, 2x3... and so on, then calculate an average and show the values in a table.

Results
Exclude the first sentence from “Results”. This should be in the “Sample population” section (240-39 and 250-19).
I did not get the plots.

Discussion
As there are so many questions about the methodology and statistical analysis, I did not review the Discussion. The authors have the chance to change/correct/rewrite it for the next review process.

Conclusion
- Are you testing both methods for caries detection or testing them to be used in epidemiological surveys? These are completely different things. Your conclusion definitely does not match your aim.

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.