Reviewer’s report

Title: Comparison of dental plaque reduction after use of electric toothbrushes with and without QLF-D-applied plaque visualization: A 1-week randomized controlled trial

Version: 1 Date: 19 Nov 2019

Reviewer: Monique Van Der Veen

Reviewer's report:

Dear Authors, Thank you for the revisions. I notice that you have duly answered my earlier remarks, however, not in all cases these have resulted in improvements in the text. My remarks were intended at improving the manuscript. I urge you to do so.

MY REMARK: What do you expect of the amount of bias caused by:

a) The fact that blinding of the study participants was not possible? Irrespective of your claim that participants were blinded for treatment intervention: “To ensure blinding with regard to monitor usage, the monitor-non-use group first performed the procedures for 1 week, followed by the monitor-usage group.”

REPLY TO COMMENT: Although the monitor-use group used the monitor, participants recognized that the aim of this study was to evaluate the effect of the toothbrush on plaque removal. Moreover, neither group was aware of the toothbrush used in the other group. We have added this statement in the methods section (p10, line 10).

YOUR TEXT: Participants in the two study groups were instructed on the use of the electric toothbrush, and the monitor usage group received an additional explanation concerning the operation of the monitor. To ensure blinding with regard to monitor usage, the monitor-non-use group first performed the procedures for 1 week, followed by the monitor-usage group. Thus each group did not know toothbrush which another group used.

NEW REMARK: This new sentence is not grammatically correct, please add: Participants were informed that the toothbrush was newly developed and that the aim of this study was to evaluate the plaque-removable effect of this toothbrush. Neither group was aware of the toothbrush used in the other group.

MY REMARK: b) The dependence of the dental students on the researchers for their grades at dental school?

REPLY TO COMMENT: All participants were school of dentistry students. All researchers were staff members of the school of oral health sciences. As such, the students did not depend on the researchers for their grades.

NEW REMARK: Please add this information when describing the study settings at the start of the Materials and Methods section.
MY REMARK: Demographics of the two groups (age and sex) can simply be mentioned in the text. There is no need to include this in a data table. Data in Tables 1 and 2 can be combined.

REPLY TO COMMENT:
It is important to keep Tables 1 and 2 separate to indicate that there was no statistical difference between the intervention and control groups. Similarly, although no change in GI or SEOH was observed in the two groups, we believe that all statistical data should be included.

NEW REMARK: I disagree. All information in Table 1 except gender and age for the two groups is repeated in Table 2. The information regarding gender and age and that the two groups are not significantly different at baseline regarding these demographics can be mentioned in the text. Hence Table 1 is superfluous.

MY REMARK: Discussion: What effect on the gingiva was anticipated from the QLR-brush, that could be reflected in the GI?

REPLY TO COMMENT:
Due to the camera device, the height of head of the toothbrush was higher than that of a common electric toothbrush. However, the unique shape did not have a harmful effect. Moreover, irradiation of light with a wavelength of 400 nm did not induce inflammation or scalding of the gingiva.

NEW REMARK: The extra height of the brush head may be mentioned when describing the QLR-brush. The intensity of 400nm light used for fluorescence imaging should not be harmful to the gingival tissues. It may suppress inflammation. This could not be assessed with GI, since having gingival was an exclusion criterion. inflammation. Also the GI does not reflect scalding, only inflammation.

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.

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

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