Reviewer's report

Title: Effectiveness of the bucco-lingual technique within a school-based supervised toothbrushing program on preventing caries: a randomized controlled trial

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Reviewer: Satu Lahti

Reviewer's report:

The paper aims to assess if the bucco-lingual technique can increase the effectiveness of a school-based supervised tooth-brushing program on preventing caries. This is an interesting question but the paper lacks the public health perspective which is a key element of such a study. Even more so as the author refers to cost-effectiveness and prevention strategies is a low risk population. In that context more recent work of Hausen et al. would have reserved more attention.

The main shortcoming of this paper are the study design and sometimes poor language that remains a reader confused about what is actually meant.

The title states the paper to be a randomized controlled trial but in the methods terms doubled blinded, dynamic cohort and analysis on individual level are used without clearly stating what was done. Besides examiners who else were blinded? How authors justify the analysis on an individual level and the selection of schools?

One would have expected the flow of participants in the figure 1 to give more light on this matter but the figure is very difficult to understand. Maybe a statistician or epidemiologist more familiar with these matters would but this should be clear to every reader. One would also expect more detailed information about the baseline characteristics: justification for their selection and how they were measured. How were surfaces-month actually calculated?

High risk group seems to have been selected for intervention but to ethical consideration is provided why part of the pupils were excluded from the program. Is this really an community intervention or high-risk approach?

As the design is not clear it is very difficult to assess the results as well as discussion and conclusions based on that. Currently the results include also some parts that should be given in methods section. Numbers provided in the table are unnecessarily repeated in the results.

Gender-specific results are also presented but no justification and reference is given to that approach in introduction or methods.

In the conclusion author states that the results can be used in a broader
population. Without assessing the cost-effectiveness and application in the entire community no such conclusion can be drawn.

**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’