Reviewer's report

Title: Emotional stimuli candidates for behavioural intervention in the prevention of early childhood caries: a pilot study

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Reviewer: Kitty Jieyi Chen

Reviewer's report:

Thank you very much for inviting me to review this manuscript. The topic is interesting. However, I suggest that the author should pay attention on the words used. Some words in this manuscript are misleading and not precise.

Besides, there are some issues need to be address:

Two critical issues needed to be addressed:

First of all, the aim of this article is inconsistent in the abstract and in the main text. According to the main text, it should be 'establish an intervention approach' and figure out its effectiveness on changing mothers' behavior. However, the outcome measurement is the SAM which is an 'emotional assessment tool'. The author may need to justify how mother's emotion related to mother's behavior and how mother's behavior helps to prevent ECC (as suggested by the title)? Moreover, how can a cross-sectional study conclude that the intervention influences the dental caries prevention as there is no follow-up for tracking the behaviors and oral health status changes? The result seems unable to answer this research question. This study can only provide some information about the relationship of the self-designed questionnaire (20 stimulus) and the mother's emotion. Please narrow down the aim and objectives.

Secondly, it's written in the abstract that oral examination will be performed on the infants. However, there is no single paragraph in the main text about the oral examination. As the title and the aim are related to the prevention of dental caries, please revise.

There are some other issues needed to be addressed:
Abstract

Methods: Please provide details on sampling method? study site? Index adopted? and Statistic methods?

Result: In the result, it should report with the numbers and statistic results. Please don't discuss in the result.

Conclusion: please match the aim and conclusion. The conclusion is not suitable as the result only shows that the stimulus related to the emotion, and there is no data showing that it can helps to improve mother's behavior let alone the effectiveness of preventing ECC. The statement seems exaggerate the results.

Main text

1. In line 54-57, please clarify the definition of ECC. It leads to misunderstanding (a form of a teeth …… second year of life) and in Ln 57-59, the definition is wrong (Severe ECC (s-ECC) is present if there is no caries-free tooth surface in children younger than 3 years….). Please check the definition of AAPD (Reference 5) for the correct description. Besides, some sentences are not precise and misleading (For example, Ln 46 what do you mean by low tooth surface exposure? and Ln 50-52.) Please copy edited the manuscript.
2. Ln 68-72 should be deleted and Ln 73-89 should be more precise.
3. I am wondering that if there is any similar study on this factor conducted in dental and medical. Why do you think that the factor that you study may relate to dental caries? Please revise the research gap.
4. Please state the aim and objectives clearly in the introduction. I think the author should be careful for the words, as I am not sure if it can 'establish' a preventive approach by just one pilot cross-sectional study.

Besides, the aim in the main text is different from the one in the abstract, please revised.

Furthermore, what do you mean in Ln 98-101? Are you focusing on the comparison of these two kinds of picture on mothers' response? What does it related to the research question? It seems there is no statistical data about the differences of these two kinds of pictures. Moreover, in the questionnaire, which stimuli are for the consequence and which one is the result of the behavior? Please provide the information.

Method

1. Why do you choose this age group( infant)? Please justify in the discussion.
2. How did you calculate the sample size? Is it big enough to perform the data analysis? Besides, why do you adopted convenient sampling, please also justify in the discussion.

3. What are statistic methods adopted? Is hypothesis testing performed? Please provide the details.

4. Who educate the mother, only one facilitator or more than one? How to make sure that the effectiveness of education by different people is the same? What kind of education materials adopted (Ln 106)?

5. As I have mentioned earlier, how can the author determined that the emotion can affects the behavior in the cross-sectional study? (Ln 122) Please discuss or provide information in details.

Result

1. Please provide the background information of the studied mothers, and whether the infants are the first-born children, as it may related to mothers' knowledge or consent.

2. About the borderline of negative and positive and the response of mothers, is there any references or guidelines of the usage of SAM? If so, please provide the details, if not please justify why (Table 1).

3. What dose low valence stands for? When mothers stimulate by the stimuli, they are unhappy? Please report the result clearly.

4. In table 1, for the V and T, what dose W and I stands for? It's hard to understand Table 1 and hard to understand how the participants be instructed to filled in the questionnaire and rate the SAM?

5. For the questionnaire, how to defined which stimuli is positive and which is negative? (Ln 141). This paragraph is confusing? Please state clearly what are these results suggesting.

6. For Ln 152 to 154, why do you perform the analysis of the relationship between valence and arousal? Are you suggesting that they have a relationship? If so what is this relationship related to your study aim? Please justify.

7. The description of Ln 152-154 is confusing. Isn't control is measured by domain? If the author analyze the arousal and valence, how can the data show the relationship with control? Please justify or report it clearly.

Discussion

1. In Ln 180 to 184, I agree that emotion may influence the behavior. However, my concern is that the result of this study can only provide that there is a relationship between the stimuli. Please discuss or correct the manuscript.
2. In Ln 190 to 210, please provide more information of similar study in the discussion. How does it like? What can we refer from these studies? What dose this study and other studies contribute to this field. How do these stimulus helps the dentist or researcher to prevent dental caries in the future? The discussion part should not only repeat the result. Please revise.

**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.

Unable to assess

**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:

Not suitable for publication unless extensively edited

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