Author’s response to reviews

Title: What Really Happens in the Home: A Comparison of Parent-Reported and Observed Tooth Brushing Behaviors for Young Children

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Author’s response to reviews:

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Dear Dr. Bhoopathi,

Thank you for considering our manuscript and for the opportunity to review and resubmit it. We have addressed the reviewer concerns. The specific changes made are described below.

Sincerely,

The Authors
Mark E Moss, DDS, PhD (Reviewer 1):

This is a relatively small study to determine feasibility for data collection around health behaviors related to toothbrushing in children under age 3 years. It is well written and demonstrates the practical aspects and barriers that observation of toothbrushing practices may involve. It is valuable work for establishing the data collection process in a research project. The findings are nicely summarized. The limitations are clearly outlined.

I think the dollar amount of the incentive for participation should be listed. This is valuable information for investigators who are planning similar projects.

Response: We added this information in line 104 of the methods section. Of note, the amount of compensation varied because participants had different amounts of data collected depending on which phase of the pilot they enrolled in.

I have two additional minor concerns:

Abstract, Line 40 - I think it should be "smear" and not "spear" of toothpaste.

Response: Thank you for catching this! It has been corrected to say “smear”.

Discussion, Line 187 - edit to read "62% of parents/caregivers of children 3-4 years old report".

Response: We made that edit. Thanks.

Dalia E. Meisha, BDS, MPH, CAGS, DScD (Reviewer 2):

Thank you for the kind invitation to review this article. The objective of this research was to compare parent self-report to observations of young children tooth brushing. The topic is interesting and the paper is generally well written.
My comments are below:

1. In the objectives, it is stated "We compared parent self-report to observations to determine the accuracy of self-report in this population." While this paper addresses the comparison between parent self-report to observations, however it does not determine the accuracy of self-report as being observed might have had an influence due to social desirability bias.

Response: This is an important consideration. Social desirability affects not only the self-report but also the observed behaviors. We can think of no way to completely eliminate social desirability in a study design where families must volunteer to participate. We added a sentence in the limitation section, line 247, to address this.

2. In the methods section it is stated "A pair of RAs conducted the home observations." It is good a pair of RAs conducted the home visit, but it is unclear, were the recorded observations of the home visit a result of consistency between the 2 RAs or as one RA was responsible about the observation and the other for the videotaping? More explanation in this regard would be helpful. Was any training and/or calibration of observers (RAs) done? In addition, talking about the risk of observer bias and perception bias as a limitation is encouraged. It would be interesting to know more details about the RAs such as their race.

Response: One RA used a laptop computer to ask questions and document responses. The other RA used the timer and video recorder. We added a sentence explaining this in the methods section, lines 102-103. RAs adhered to a strict data collection protocol that provided prompts and included branching logic to ensure consistency. The purpose of this protocol was to limit, or at best standardize, the bias introduced by having observers in the home. RAs practiced data collection with volunteers under the observation of their supervisor until sufficient consistency and adherence to the protocol was reached. We added text in the methods section, lines 93-94, explaining this process. Because of the pilot nature of this study and the lack of standards for the observed measures, we could not calibrate them. The race/ethnicity and sex of the RAs was added to the methods section, lines 85-86.

3. In the methods section, it is stated "sample size of 45 was considered to be sufficient to answer the primary question of feasibility." Please justify why 45 was considered sufficient.
Response: Because the goal was feasibility, we did not conduct power calculations. We instead aimed to recruit between 30-50 subjects with the assumption that the sample would be sufficient to demonstrate variability in the outcomes and allow us to capture trends.

4. In the methods section, it is stated "Fishers Exact Test to identify statistically significant associations" was used. However, nothing was mentioned regarding that in the results section.

Response: P values are provided in the results section (Lines 148-149, 155). These were generated using Fisher’s Exact Test.

5. In the conclusion section, it is stated "Observation and video-recording of brushing routines and equipment are feasible and acceptable to families." However, only 40% agreed to participate and ended up with only 24% who completed the home observation. These percentages suggest it is feasible, but may not be very acceptable to families. It is suggested to re-phrase this part of the conclusion to make sure it is supported by the data shown?

Response: Thank you for pointing out this important point. We added the word “some” in line 185.

6. In the limitations of the study, it is encouraged to discuss how the Hawthorne effect and volunteer bias might have affected the direction of the results of this study.

Response: We added a sentence on the Hawthorne effect and volunteer bias to the limitations section, line 247-249.

7. Overall, this appears to be a good interesting study and does add to the gap of knowledge in this area.

Response: Thanks!