Author's response to reviews

Title: Is self-reported toothbrushing frequency a reliable indicator for the assessment of oral hygiene in epidemiological studies on caries in adolescents? A cross-sectional study

Authors:

Giovana S Gil (giovanasgil@yahoo.com.br)
Francine S Morikava (fransumie@gmail.com)
Gabriela C Santin (gab_santin@hotmail.com)
Tatiana P Pintarelli (tatipegoretti@hotmail.com)
Fabian C Fraiz (fabianfraiz@gmail.com)
Fernanda M Ferreira (femoraisfe@gmail.com)

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Author's response to reviews: see over
Dear Dr Todd Rockwood,

We are enclosing the revised manuscript “Is self-reported toothbrushing frequency a reliable indicator for the assessment of oral hygiene in epidemiological studies on caries in adolescents? A cross-sectional study”. All corrections are marked in red.

Our responses to the topics addressed are presented below:

**Referee #1**

**Reviewer´s comment:**
Methods: Page 7: Line 6: Is the single examiner for the clinical examinations blinded to toothbrush frequency and salivary examinations? If not, there may be a possibility to cause observational bias.

**Authors´ response:**
Yes, the examiner was blinded to brushing frequency and the salivary examinations. This information has been added to the text (page 7; line 16).

**Reviewer´s comment:**
Results: Page 9: Line 7-10: Table 1 showed the association of each variable with DMFT. Therefore, it seems that this sentence about the relationship between household income and each variable is not relevant to Table 1.

**Authors´ response:**
We rewrote the text to clarify this issue (page 9; line 18-21).

**Referee #2**

**Reviewer´s comment:**
On page 4 lines 6-9 and 13-16 appear to repeat information; please re-write, combine, or eliminate.

**Authors´ response:**
The text was changed to eliminate the repeated information (page 4; lines 6-8).

**Reviewer´s comment:**
It is unclear why you are collecting the socio-demographic and economic characteristics since they do not appear to be part of your hypothesis. Please explain why you collected this information.

**Authors´ response:**
The socio-demographic and economic characteristics were collected to adjust the results for the other variables, since the literature has shown that these could be confounding variables in studies on dental caries.
Reviewer’s comment:
Did every caregiver provide that information? More information on your sample is required - It is hard to believe every child assented and every parent consented and completed all the paperwork.

Authors’ response:
Among the 644 adolescents invited to participate (page 5; line 8), 589 had complete data for the main variables of the study (dental caries, toothbrushing frequency, visible plaque index and simplified oral hygiene index) and composed the final sample (page 9; line 13). The loss of 8.5% reported in the results (page 9; line 13) was due to a lack of parental consent, refusal to participate and incomplete data regarding the main study variables. For the other variables, occasional missing data occurred, but did not compromise the analyses.

Reviewer’s comment:
Was all of this done in Portuguese? Are all these instruments reliable in Portuguese?

Authors’ response:
Yes, all the questionnaires were in Portuguese and were based on questions from the Brazilian National Survey Research on Oral Health (http://dab.saude.gov.br/portaldab/ape_brasil_sorridente.php?conteudo= vigilancia_epidemiologica).

Reviewer’s comment:
Please clarify how the intra-examiner agreement took place and what the number of examiners was. (Page 7 line 5) as well as some kappa results.

Authors’ response:
Information on the calibration exercise has been clarified in the text (page 7; line 1-14).

Reviewer’s comment:
Why do you think that cross-sectional design is a limitation - what would you have preferred to do?

Authors’ response:
We appreciate the reviewer’s question, which made us rethink this portion of the discussion. Indeed, based on the objectives of the study, the cross-sectional design does not compromise the findings. It would have been a limitation if the study were investigating determinant factors of dental caries. Thus, the sentence was removed to make the text more coherent and the paragraph was rewritten (page 12; lines 11-13).

The authors want to thank the reviewer for the suggestions, which certainly helped improve the manuscript.

With our best regards,

Fernanda Morais Ferreira
Submitting/corresponding author