Author’s response to reviews

Title: Hierarchizing caries risk factors among first-year university students in Nice (France): a cross-sectional study

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Author’s response to reviews:

Dear Editor,

Thank you very much for your comments. We have attempted to take all your remarks into account in the revised version of our manuscript. Our responses are provided below.

1. Please write examination in full – not just exams

Lines 32, 46, 217: “Exams” was replaced by “examination” in the whole manuscript.

2. It is important to be specific about the daily health-related behaviors measured in this study.

Specific measured daily health-related behaviors were added to the abstract.

Lines 34-35: The sentence was modified as follows: “…daily health-related behaviors (number of main daily meals, daily sugary intakes, smoking, alcohol consumption, consumption of cannabis or other drugs), …”

3. The variables measured as oral health status can be improved - oral health issues (dental crowding, oral hygiene, presence of caries, presence of pit and fissure sealant remnants). This suggestion summarises the oral health status assessed.
4. Please revise the sentence to read: The DMFT score of undergraduate students has been the object of studies in various universities worldwide. Studies in Europe, North America, Asia and the Middle East show that the DMFT score of undergraduate students range from $4.1 \pm 3.1$ at Sana'a University in Yemen [18] to $3.9 \pm 3.9$ at San Luis Potosí University in Mexico [19], $2.9 \pm 3.3$ at Helsinki University in Finland [20], $2.0 \pm 2.9$ at Okayama University in Japan [21], and $1.2 \pm 2.0$ at Nice Sophia Antipolis University in France [22].

5. The authors note that: Healthy dietary habits and good oral hygiene are critical for the prevention of caries and the maintenance of good oral health [23]. However, the focus of discussion on healthy dietary habits is sugar consumption. Specificity is important. Please revise the statement to highlight the focus of the discussion - sugar consumption.

6. Revise the statement to read - …revealed that 43% of the students had at least one carious lesion.

7. Just curious – why is the place of toothpaste purchase (pharmacy or supermarket) a significant caries risk variable in France? This does not show up in the background. May be important to highlight this in the background statement. It is a variable often studied in the literature.

Lines 68-72: We added the following sentences in the background: “Besides, the relative caries preventive effects of fluoride toothpastes of different concentrations increase with higher fluoride concentration [17]. Though, in France, toothpastes sold in pharmacies need a special authorization (AMM) because the amount of fluorides is high (1500 ppm and more), and they are...”
therefore considered as medicines. Because they are less fluoridated (1450 ppm and less), toothpastes in supermarkets are considered as hygiene products.”

8. Revise the statement to read: A closed room was equipped with a dentist chair to provide privacy for study participants.

Line 137: The sentence was modified as follows: “A closed room was equipped with a dentist chair to provide privacy for study participants.”

9. Line 142 - Change ‘accommodation’ to ‘accommodation status’

Line 145: “accommodation” was replaced by “accommodation status”.

10. Line 155 – delete the repeat plaque index

Line 159: The correction was made.

11. Table 2: based on the criteria of 0.25, 20 out of the 30 variables listed in the table 3 meets the criteria to be entered into the multivariate analysis table. Please present the table 4 with all the variables entered and the reference variables. This helps readers identify the effect size. This may not be of interest to you but will be for anyone planning to do a systematic review in the future. Please include the outcome of the comprehensive multivariate regression analysis in the table 4 not just a summary of the significant findings.

Line 457: The table 4 was modified according to your suggestions.

12. Interpretation of odds ratio – I think this is interpreted as increasing the caries risk not as multiplying the caries risk. The report of the odds ratio needs to be modified please.

Lines 215-220: The sub-chapter was modified according to your suggestions: “The multivariate analysis identified pejorative risk factors and ranked them as follows: failure to seek dental care due to financial reasons (OR 3.06 95%CI 1.40-6.70), poor oral hygiene revealed during the oral examination (OR 2.59 95%CI 1.60-4.20), and poor self-reported oral health (OR 2.43 95%CI 1.24-4.77) (Table 4). Conversely, this study also highlighted and ranked the protective factors as follows: a preventive visit to the dentist (OR 0.63 95%CI 0.41-0.99), the use of an electric toothbrush (OR 0.36 95%CI 0.17-0.77), and the presence of pit and fissure sealant remnants (OR 0.22 95%CI 0.05-0.97).”

14. The authors note - However, the failure to seek dental care due to financial reasons persists for some students. This is a very important finding. Can the authors provide possible reason(s) for this?

Lines 236-238: This possible reason was added: “In 2015, a French national report revealed that 19.1% of students lived below the poverty line, i.e., less than 987 euros per month. The advance of dental fees can be perceived as unaffordable in this context [47].”

15. Similarly, can you discuss why the observed poor oral hygiene despite the issuance of guidance?

Actually, good practice guidelines are not enough to enhance a good oral hygiene for students. The lack of hygienists may explain this situation.

Lines 250-257: This sub-chapter was added: “Good practice guidelines are not sufficient to enhance a good oral hygiene for students. Actually, in France, there is no dental hygienist to educate patients in regard to diet and oral hygiene habits. Nevertheless, the success of the dental hygienist in the dental health education of patients has long been recognized in terms of influencing behavior [49]. A Swedish study revealed that patients' attitudes were less negative towards dental hygienists than towards dentists [50]. This difference was more pronounced among students than general patients and patients with periodontal disease. Therefore, this specific population could greatly benefit from the introduction of dental hygienists in France.”

16. Lines 242-243: please correct punctuations

Line 246: The correction was made.

17. The authors wrote: It is interesting to note the difference observed between the students’ statements regarding oral hygiene habits and poor hygiene as revealed by the examination, which is a proven risk factor. Please note this study did not discuss or highlight students’ statements about their oral hygiene habit. This statement is therefore out of context.

The sentence was deleted.

18. Line 250 -255: this discussion is out of context for this paper. The ranking does not highlight the role of this variable. Therefore, taking time to discuss it as an important factor is out of context. Please delete the paragraph.
The paragraph was deleted.

19. Same for lines 257-272

The paragraph was deleted.

20. Line 285 – the word ‘deduce’ – is it appropriate?

The sentence in which the word “deduce” was including was deleted.

21. The authors note - In the field of oral health, there is no other method. No other method for what?

This sentence was of no importance and was thus removed.

22. Line 292 – authors wrote etc. Please list everything that needs to be listed.

The sentence in which the word “etc” was including was deleted.

23. Line 274-304 – the paragraph is too long. It discusses sooo many issues. The paragraph stated with highlighting fissure sealant as a protective factor for caries. But diverts to other discussions that are indirectly linked to the focal subject. Please reconstruct this paragraph in ways to highlight the preventive factors – preventive visit, use of electric tooth-brush and presence of fissure sealants. This would be most helpful for the readers.

Lines 259-268: This paragraph was modified and shortened according to your indications: “The highest-ranking caries protective factor among the study population was the use of dental sealants, followed by the use of an electric toothbrush and a preventive visit to the dentist. Sealants are used and have been recommended in France since the early 2000s, and their efficacy is well documented [51]. The role played by the presence of sealant remnants is thus not surprising. Our results also confirmed recent studies that tend to prove the superiority of the use of electric brushing over manual brushing [52]. Preventive dental consultations remain rare in France despite institutional incentives. Since 2007 the “M’T dents” (love your teeth!) program has been offering all children aged 6, 9, 12, 15 and 18 one free dental consultation and treatment, if necessary [53]. The purpose of this initiative was to develop the habit of preventively visiting the dentist. However, 41% of the students had not visited the dentist in the previous year. Moreover, the reason for the last dental appointment was preventive in only 69% of the cases.”