Author’s response to reviews

Title: Status of dental caries and associated factors in Tibetan adults: findings from the fourth China National Oral Health Survey

Authors:
Lingxia Guan (313097046@qq.com)
Jing Guo (lucyjing@126.com)
Jinghao Ban (jinghaoban@163.com)
Gang Li (fmmuligang@fmmu.edu.cn)
Juan Tong (shenlan305@126.com)
Aiyun Chuan (1291916063@qq.com)
Tian Tian (50472849@qq.com)
Bing Han (149227633@qq.com)
Kun Xuan (xuankun@fmmu.edu.cn)
Sheng Chao Wang (wangshengchao@fmmu.edu.cn)

Version: 2 Date: 25 Jun 2020

Author’s response to reviews:

Dear Editor:
We thank you very much for your comments on the revised manuscript, as well as the opportunity to resubmit a revision. We have included the limitation of the chosen method of analysis in the discussion section and answered the questions from the reviewers.

Editor Comments:
Please take on board the reviewers comments about the method of analysis. If you do not wish to change the analysis method based on these comments, please include a discussion of the limitations of your chosen method of analysis in the discussion section. Please also ensure all claims and statements are supported by appropriate published studies.
A: Many thanks for your suggestions. We have included the limitation of the chosen method of analysis in the discussion section (in Strengths and limitations’, page16, line 3~6).
Reviewer reports:

Reviewer 1: The authors responded adequately to the major compulsory revisions. I believe the paper may be accepted for publication.
A: Not necessary to answer.

Reviewer 2: Dear authors, thank you for your detailed revisions and responses. The manuscript as a whole has been improved. I just made a few comments regarding your responses. Please see the comment below:

Data Analysis:
In my first review, I questioned whether you used a conceptual model or thought about using a hierarchical analysis.
In your study, you built a final model (multiple logistic regression) using only statistical criteria to determine the impact that different variables have on your outcome. Adopting this strategy is definitely not the same as using a conceptual model or performing a hierarchical analysis. According to Victora et al. 1997, although this approach is not wrong, it fails to consider the inter-relationship between the variables, since it is considered that they are all at the same level of hierarchy. However, again, the brushing frequency, in its final model, can easily be adjusted by income and that makes sense. However, income cannot be adjusted by the frequency of brushing. Doing this is like saying that the frequency of brushing teeth influences individual's income level. There is no plausibility for this relationship. Unfortunately, in the epidemiological literature, we still see distal variables (such as income) being adjusted inappropriately by proximal factors (such as frequency of brushing) resulting in a reduction or elimination of the real effect that the distal variable has on the outcome.
A: Thanks again for your careful consideration for the multi-variables analysis. Logistic regression analysis is often used to investigate the relationship between these discrete responses and a set of explanatory variables. In our study, there were several factors which were possible explanatory variables (including income and frequency of brushing) for the high DMFT and DF-root value. When we performed the multiple logistic regression, the result indicated that high frequency of tooth brushing was the independent protective factor for the high DMFT and the OR=0.39(0.21-0.72). The OR value indicated that the average risk of the high DMFT for high frequency of tooth brushing people was 0.39 times than those had low frequency of tooth brushing after adjusted other factors. The “adjusted” means that “eliminate other factor (such as income) influence or contributions for the high DMFT”, doing this not saying that the frequency of brushing teeth influences individual's income level. But it was true that the frequency of brushing teeth had no influences on individual's income level in our study. Actually, we had explored the interactions of the variables in the multiple logistic regression model, there was no significant interaction between income and the frequency of brushing teeth. Thanks a bunch again.

Discussion: Previously, I requested a more in-depth explanation of the difference between the sexes and the prevalence of caries. The reasons pointed out by the authors for the difference found remain very vague and without a solid scientific basis. There is no evidence proving that the difference between the period of eruption of teeth between boys and girls, which is small and widely variable, is a risk factor for
the development of carious lesions. In addition, the difference in salivary flow between men and women pointed out by the authors was investigated in a study with a small sample, 50 healthy adults, making it difficult to extrapolate this information.
Is there any evidence for the information that women have easier access to food supplies and frequent snacks during food preparation?
Although I disagree, I respect your opinion
A : Thank you for your comments on this section. The reasons for gender difference we presented in this section were just underlying causes and similar documents supported this speculation[1]. Thanks again.