Author's response to reviews

Title: Social Determinants of Health and Periodontal Disease in Brazilian Adults: a cross sectional study

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Author's response to reviews: see over
Mr. Editor,

We are sending Response Letter to the reviewers of the article entitled "Social Determinants of Health and Periodontal Disease in Brazilian Adults

Anticipate that all suggestions were accepted.

Sincerely,

Maria de Lourdes Carvalho Bonfim

Revisor 1

Kerstin Ohrn

We appreciate your considerations about our paper. Then we clarifications point by point:

1. The sampling procedure is somewhat unclear. The description ends with "until the number of adults needed for the sample was achieved, however, there is no information how many that was needed. It is stated that the sample size was calculated on the prevalence of periodontitis in the age of 34 - 44 of Brazilian adults but there is no reference to the figure. Later on you report that you used cluster sample and thus the sample size was multiplied by two, why? You ended with a total of 832 and out of those 21 were excluded which is 0.025% not 10.7% as reported. It is impossible to understand how you ended with 744 individuals. In the sampling procedure you report that a certain amount of participants agreed to participate, how many were asked? You later report that individuals who had cognitive difficulties were excluded, how many was that. I would like to have a clear description of the sampling procedures and exclusion and inclusion criteria and how many were excluded and why and how many dropped out.

We made new wording in the article trying to clarify all these doubts and excerpt is below

The sample size calculation was performed using the equation proposed by Lwanga and Lemeshow [1] to estimate disease prevalence. We adopted the following parameters: the prevalence of periodontal disease in the Brazilian adult population aged 35-44 years (34.6%) [2], a significance level of 5% (\(\alpha = 0.05\)) and a margin of error of 20% (\(\varepsilon = 0.020\)). In this study, in which the technique was to probabilistic sampling by clusters per stage correction was adopted for the design effect \(\text{deff} = 2.0\) was the highest possible thus, the size of the final sample as multiplied by 2.0. The design effect (deff) is a feature used to measure the effect of the sample plan on the average variance of the estimates by calculating the ratio of the estimated variance
determined by the sampling plan to the estimate of the variance that would be obtained for a random sample of the same size [3]. This procedure yielded a sample size of 832 subjects. The exclusion criteria were as follows: edentulism (21), refusal to participate (1), being bedridden (17), inability to answer the questions on the questionnaire due to a lack of understanding (20) and not being home during three contact attempts (30). Thus, the final sample consisted of 743 individuals. The total loss was 10.7%.

Answer: page 4, paragraph 3

2. I understand from the analyses that age were dichotomised into two groups why? and that household income was dichotomised inte > 300.00 and < 300.00 why did you divided at 300.00? In the discussion you report that half of the population received 375.00 wouldn´t that be a better cut off?

The per capita family income was dichotomized by the median, so stay more homogeneous groups. Furthermore the group average was very close to the median.

Answer: page 5, paragraph 1(line 4)

3. I am very confused about the result. I would like to see figures on the correlation between periodontal variables and socioeconomic variables. You report on 3 different groups one group had presence of gingivitis, this is only 15 individuals according to table 1, group 3 comprised of widowed females which could not be more than 13 individuals according to table 1, it is hereby not possible to draw the conclusion you have done based on 13 individuals or less.

The correspondence analysis enabled us to form three groups with different profiles (Figure 1). The relationships between the categories of the variables in this analysis were investigated without needing to assign a causal structure or assume a probability distribution a priori. This technique is appropriate for the study of population data, it is not inferential. This technique is useful when studying risk factors that may be associated with certain characteristics to be analyzed, and it allowed us to identify groups that have the same risk factors [4].

Answer: page 5, paragraph 5

4. In the discussion you compare the results with other studies on prevalence on periodontal disease in Brazil based on CPITN. However, the figures exceed 100% which is very confusing. In addition, the figures is far more high than your results, which demand a discussion

Sorry, there was a typing mistake the result of the Brazilian data of SB Brazil 2010

Answer: page 7, paragraph 1

5. In the discussion you discuss who are likely to attend dentistry and who are likely to perform oral health behaviour, but this is not examined in your study.
We agree and remove such comments.

6. You conclude that socioeconomic and demographic factors apparently influence the onset of periodontal problems. You have only studies the correlation not the influence

Was rectified text
Answer: page 9, paragraph 4

7. In table 1 there is one individual who did not respond to CPITN, isn’t it rather than she/he was not examined.

In table 1, the total tests (CPI) was 743, because a person refused to be examined. Já was corrected because this one is among the excluded.

Answer: Table 1 and page 4, paragraph 4(line 12)

8. There is an urgent need to edit the language
Been reviewed.
Answer: EDITORIAL CERTIFICATE

9. In the introduction you discuss developing countries and have a reference to a Swedish study ref. 3 which is incorrect, Sweden is a developed country. Later I miss a reference after the statement "several pathological conditions are associated with the socioeconomic status of individuals in a cause-and-effect relationship"
Remade references
Answer: page 3, paragraph 2(line 3)

Cited References


Reviewer 2

Thiago Ardenghi

We accept your considerations and we have to report:

2.1. Introduction
Its well-written. However, it would be strengthened including official data regarding the prevalence and severity of periodontal disease in the country.

These data are included in the discussion.
Answer: page 6.

2.2. Methods
2.2.1. Although the sample size represents one of the strengths of this study, sample size was calculated only to assess prevalence. Authors should give what is the minimum sample size required to assess the associations posed in their research question

The sample was better detailed (calculation, eligible, exclusion and loss) and data from the SB Brazil reviewed.
Answer: page 9, paragraph 4

2.2.2. As this manuscript used data from a countrywide survey of oral health, further details on the SB Brasil Project would be desirable (for instance, the coverage, sample and so on). I suggest including the following reference: Roncalli AG et al. Relevant methodological issues from the SBBrasil 2010 Project for national health surveys. Cad Saude Publica. 2012;28 Suppl:s40-57.

The sample size calculation was based on data from the SB Brazil 2010. Reference accepts.
Answer: page 4, paragraph 5 (line 3)

2.2.3. Please, provide the rationale for the ethnicity classification. It seems that the authors assessed color skin/race rather than ethnic group. So, I suggest changing the term "ethnicity" for "race".

The change to race and ethnicity was considered and accepted.
Answer: page 5, paragraph 1 (line 2)

2.2.4. Variable “level of education”: for proper comparison, I suggest also providing it in years of formal education.

The change in educational level for years of schooling was considered and accepted.
Answer: page 5, paragraph 1 (line 3)
2.2.5. Analysis: As the authors used a multistage cluster sample, a correction factor for cluster sample must be used for run the descriptive analysis.

The sample description was rewritten and further details on the methodology. The correction factor was used in this study, which used a probabilistic sampling by clusters per stage. The adopted correction for design effect deff (2.0 - the highest possible), and the size of the final show was multiplied by 2.0.

Answer: page 4, paragraph 3 (line 6)

2.3. Results
- Provide the number of eligible and the response rate.

- Number of eligible adults was 743 with a total loss of 10.7%.

Answer: page 4, paragraph 3 (line 14)

2.4. Discussion

Suggestions accepted

Answer: page 8, paragraph 1

2.5. Conclusion
- In my opinion, the sentence “Despite the social inclusion policies implemented in recent years in Brazil, there is still much to do.” should be omitted. It is not related to the research question and it was not assessed in the paper.

The suggestion was accepted.

Answer: page 9, paragraph 4.