Author's response to reviews

Title: Migration background is a risk factor for caries in Austria school children, even when parents have received a higher education.

Authors:

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Version: 4 Date: 11 March 2014

Author's response to reviews: see over
Dear Editors

Enclosed please find our newly revised version of the manuscript now entitled, “Migration background is a risk factor for caries in Viennese school children, even if parents have received a higher education” by the authors Barbara Cvikl, Gertraud Haubenberger-Praml, Petra Drabo, Reinhard Gruber, Andreas Moritz and Andrea Nell. We revised the manuscript according to the reviewers’ comments. Changes in the manuscript were marked by 'track changes'. Our response to comments of the reviewers is given in this letter. We also want to thank the reviewers for their constructive criticism, whereby the manuscript was much improved.

Sincerely,
Reinhard Gruber

Reviewer's report
Title: Migration background is a risk factor for caries in Austria school children, even when parents have received a higher education.
Version: 3 Date: 16 January 2014
Reviewer: Sigrid Van den Branden

Reviewer's report:
In general this is a much improved manuscript. The results of the new analyses are very interesting and can provide new and important knowledge in this domain.

Major compulsory revisions
However, based on the information that is provided in the Results section and in the tables, I cannot comment on the outcomes and conclusions that were made.

1. Please provide more information in Table 2, the mean scores for the different educational level and type of school in children with and without migration background, the test statistic (F, t, exp(B), OR...?), and p-values or confidence intervals for all factors included in the analyses, not only the interactions. What is the main effect of migration...
background, educational level and type of school? Did you use a full-model with two- and three-way interactions or not?

AUTHORS: We now added more information on the statistical analysis, the number of participants, the means ± SD of DMFT of each analysis, the test statistic and the p-values in Table 3. Additionally we describe the statistical procedure in a more detailed way in Material and Methods and in the Results section.

2. Were the analyses performed on all participating children or was there missing data, please provide N for each analysis?

AUTHORS: The analyses were performed on all participating children. We now provide the number of participants for each analysis.

Unfortunately for the moment, it is not possible for the reader to interpret the results and conclusions.

Reviewer's report

Title: Migration background is a risk factor for caries in Austria school children, even when parents have received a higher education.

Version: 3

Date: 29 January 2014

Reviewer: Lisa Christensen

Reviewer's report:

Dear Editor

I have reviewed the present manuscript which has now undergone many changes and new analyses have been made. Even though the theme is interesting, I am still critical to the manuscript. Below are my comments.

Major objections

1. The title indicates that the study population is representative to all school children in Austria. The study took place in the capital area only, and further, I am doubtful about the external validity of the study.

AUTHORS: We changed the title into: “Migration background is a risk factor for caries in Viennese school children, even if parents have received a higher education”

2. Figure 1 should illustrate the sampling and selection process, however, I find the figure insufficient. Number of children should be included at each level, in order to make it possible to follow the way to the final study population.
AUTHORS: We omitted Figure 2. Instead of this figure we describe the selection process more detailed and added Table 1. In this table the study population is listed with all groups and subgroups and the respective number of participants.

3. Further, I wonder how the final study population could be 736 children. According to the text in the methods section, 18 children were selected from each of the selected schools, and according to figure 2 there were 39 selected schools; that makes 702 children?

AUTHORS: In each school, an average of 19 (18.9 +/- 4.4) children were examined. We now give this information more exactly.

4. In response to earlier comments from one of the reviewers, the authors claim a participation rate of 100% “selected and agreed”, but how many of the selected children did not agree to participate? There must be some misunderstandings of the concept of participation rate.

AUTHORS: The participation rate of children, who have agreed in advance to participate in the study and were selected, was 100%. However, it is unknown how many children or their parents refused to participate in the study in advance, as this was handled internally in the school. We now added this information.

5. Further, in the discussion section under “limitations”, the authors mention possible selection bias, however, since there is no information on the number of non-participants, selection bias cannot be assessed.

AUTHORS: It is correct that we do not have information on the number of non-participants. However, because of the fact that non-participants existed, we also discussed the possibility of selection bias.

6. The authors have now used more advanced statistical methods (negative binomial mixed model), but to me, table 2 seems insufficient for illustration of the results of such analyses.

AUTHORS: We now added more information on the statistical analysis, the number of participants, the means ± SD of DMFT of each analysis, the test statistic and the p-values in Table 2.

7. In general, explaining interaction terms may be difficult and must be done carefully. The text regarding table 2 is puzzling, among other things it is necessary to show how the values 52% and 22 % are obtained. Alternatively or additionally the statistical methods can be explained more detailed in the methods section.
AUTHORS: Together with the new table 2, we describe the statistical procedure in a more detailed way in Material and Methods and in the Results section.

8. In the discussion section the authors mention that some of the results of the present study agree with and some disagree from earlier findings. The discussion of whether migration or parents’ educational level has strongest association with the caries level of their children is essential. Since the results of some of the studies that are referred to, are in contrast to the results of the present study, deeper reflections and possible explanations should be added to the present discussion section.

AUTHORS: We now discuss our findings in a deeper way, comparing them to other studies.

9. The conclusion seems to generalize the findings to schoolchildren in general. The present result cannot justify such conclusion.

AUTHORS: We are now referring the conclusion more on the results of our study.

Minor comments

10. I would prefer the term “association with” instead of “impact”, since this is a cross sectional study.

AUTHORS: We changed this accordingly.

11. The language in the new text of the present manuscript is grammatically not correct.

AUTHORS: The manuscript and especially the new text are again checked by native speakers.

12. What means “highly distributed variables (the methods section)?

AUTHORS: We changed it to the statistical correct term: “highly right-skewed variables”

13. The paragraph under the title “Basic caries status of the children” is not well written, it is unclear from the text what is shown and what is not show in tables.

AUTHORS: We rewrote the paragraph and distinguished which information is in the table and which is in the figure.

14. Abbreviations are not used consistently.

AUTHORS: We changed it accordingly.

Level of interest: An article whose findings are important to those with closely related research interests.

Quality of written English: Not suitable for publication unless extensively edited.

Statistical review: No, the manuscript does not need to be seen by a statistician.