Reviewer's report

Title: Parents education level and caries status in children with an immigration background in Austria

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Reviewer: Lisa Christensen

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The present study is a cross sectional study performed 2007-2008 among 12 year old school children in Austria. The study aimed to investigate how immigration status and education level influence children's caries status. The topic is of utmost interest; however, the present manuscript has some flaws and careless mistakes. This is a pity because the data material seems to be a valuable basis for research.

Major comments

1. The title of the manuscript does not clearly correspond to the aim of the study. There is a mix between the term oral health and caries status. The title must reflect the aim precisely.

2. Reading the background section, several studies show that the education level of parents is associated with the caries status of their children and also children’s immigration status influences their caries status. In the same section, another risk factor, namely type of school, is introduced as having influence on children’s caries status. Such variable is used in the present study but named “children’s (12 year-olds) education level”. In the methods section this is defined by two categories of schools with apparently different curricula? Does it mean that in general, 12 year-olds in Austria are clearly at different educational levels dependant on the type of school they attend? Further, are there more than two types of schools for 12 year-olds in Austria? The term “type of school” should be used instead of education level, which seems confusing dealing with children. Using such variable needs detailed explanation. Further, reference is made to ISCED system level 2 in connection with type of school. ISCED is a method for measuring educational level combining years in school and vocational training. How this is used here should be explained and a literature reference included.

3. 39 schools included in the study were randomly selected and distributed in relation to two types of schools. This selection process needs further explanation. Next step seems to be selection of the participating children and a matching process based on immigration status. How were the children selected? What was the participation rate after the selection? A diagram on the sampling and selection would be useful here.

4. From where did the authors obtain data on parents’ education, and was it father’s or mother’s education or both? Further, parents’ education level is not defined in the method section? Such definition is needed.
5. The clinical examination was made by one person and made according to WHO's recommendations. WHO recommends control for intra-examiner variability to secure the validity and reliability of clinical data. No information was given on this.

6. The Result section is somewhat confusing, since descriptions of table content and figures are mixed. Tables and figures should be described in the order they are presented.

7. To give information on data in text only (not presented in tables and figures) is necessary, since not all data can be presented in tables and figures, but “not presented in tables or figures” has to be added in parenthesis to avoid confusing the reader.

8. The term “oral health status” is often used in the manuscript. I find it necessary to be consistent in mentioning the specific indicators which are measured.

9. At least two errors on reference to tables confuse the reader: “Additionally, tooth loss as a result of caries was observed 3.5 times more frequently in children with a migration background (Fig. 1)”. How is the M component illustrated in figure 1? “The SiC Index was not associated with the education level of the parents in either non-MB children (p=0.85) or MB children (p=0.26) (Table 1)”. The SIC index is not related to education level in table 1.

10. Table 1, 2 and 3 could easily be made as one table instead of three.

11. Figure 1, 2 and 3 has no headings.

12. All boxplots lack explanation. Is the horizontal bold line the median and what is indicated by * and black dots?

13. The labels in figure 2 and 3 are apparently mixed up (when compared to the corresponding values in the tables), this took some time to discover since the explanatory text is insufficient.

14. The discussion section mentions a series of other factors that might be of interest to investigate regarding children’s caries status, but why did the study not include these factors? (Income level, how long the family had lived in Austria etc.?). It could at least be explained.

15. The aim is not included in the abstract.

Minor comments

1. As for the literature references, original references in relation to the methods used should be preferred. For example immigration status among the children was defined according to reference 35: Clark JY, Thompson IM: Military rank as a measure of socioeconomic status and survival from prostate cancer. Southern medical journal 1994, 87(11):1141-1144.


3. It would be more appropriate to use the reference: Oral health Surveys, basic

4. There are some sentences in the manuscript, which are difficult to grasp, but this might be due to language problems. In total, I would suggest the manuscript to be checked and corrected by a person with English language proficiency.

**Level of interest:** An article of importance in its field

**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.