Author’s response to reviews

Title: Cross-cultural adaptation and validation of the Child Perceptions Questionnaire (CPQ11-14) among children in Lebanon

Authors:

Adib Kassis (kassisadib@gmail.com)
Nada El Osta (pronada99@hotmail.com)
Stephanie Tubert-Jeannin (stephanie.tubert@udamail.fr)
Martine Hennequin (martine.hennequin@udamail.fr)
Lana El Osta (lanaosta@hotmail.com)
Joseph Ghoubril (jghoub@gmail.com)

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Author’s response to reviews:

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Cross-cultural adaptation and validation of the Child Oral-Heath-Related Quality of Life questionnaire (CPQ11-14) among children in Lebanon

Adib Kassis; Nada El Osta; Stephanie Tubert-Jeannin; Martine Hennequin; Lana El Osta; Joseph Ghoubril

Editor Comments:

1) Please move the List of abbreviations to after the Conclusions in the main manuscript.

The list of abbreviations was moved to after the Conclusions in the manuscript

2) For the 'Availability of data and materials' section, please provide information about where the data supporting your findings can be found. We encourage authors to deposit their datasets in publicly available repositories (where available and appropriate), or to be presented within the manuscript and/or additional supporting files. Please note that identifying/confidential patient data should not be shared. Authors who do not wish to share their data must state that data will not be shared, and provide reasons for this in the manuscript text. For further guidance on how to format this section, please refer to
Reviewer 1: Helena Silveira Schuch

General comments:

This paper reports the adaptation and validation of the Children Perception Questionnaire (CPQ) 11-14 in the Lebanese context. Although there is an Arabic version of the CPQ already validated, the authors stated that its cultural adaptation for a use in Lebanon is necessary because of the discrepancies in health care systems, social and cultural aspects with other Arabic countries. However, only very few changes from the Arabic CPQ11-14 were made for the use of the instrument in Lebanon. Therefore, this reviewer's key concern is based on whether there is a real need for cross-cultural adaptation and validation of the Arabic CPQ11-14.

The Arabic version of the CPQ was validated in Saudi Arabia. However, Arabic language differs strongly depending it is written or spoken. Academically, there is one arabic language, which is spoken on TV and written on newspapers. However, this language is not shared by the populations. Factually, there are so much Arabic languages than Arabic cultures. Beaton et al (2002) stated that the cultural adaptation is required when the questionnaire is used in different country with similar language. Consequently, before performing the study, we could not know “a priori” if a cultural validation was necessary for a use of CPQ in Lebanon, and for this reason the study should be done. Moreover, the discrepancies in health care systems, social and cultural aspects with other Arabic countries, suggested that it was necessary to verify the validity of the questionnaire.

I also have additional minor concerns, and in the current format the paper is not suitable for publication in the BMC Oral Health Journal.

Having said that, I do have some questions/recommendations/suggestions for the authors in order to improve their manuscript.

Title

I suggest including the name of the instrument in the Title, instead of "Child Oral-Health-Related Quality of Life questionnaire".

The name of the instrument “Child perceptions questionnaire” was included in the title of the manuscript instead of Child Oral-Health-Related Quality of Life questionnaire. Thus, the Title of
the manuscript was adjusted: Cross-cultural adaptation and validation of the Child Perceptions Questionnaire (CPQ11-14) among children in Lebanon.

Abstract

Please clarify if the authors mean "multivariate analyses" or "multivariable analyses", as they have distinct meanings. I recommend checking the following paper: "Hidalgo B and Goodman M. Multivariate or Multivariable Regression? Am J Public Health. 2013 January; 103(1): 39-40".

We have checked the cited paper “Multivariate or Multivariable regression” by Hidalgo B and Goodman M. We found that we used the term Multivariate inaccurately since we have one continuous outcome variable and multiple continuous and categorical predictors. Therefore, the term “multivariate” used in our manuscript was replaced with the term “multivariable or multiple linear regression models”) (Line 50).

Keywords

CPQ11-14 is not a MeSH term, please change. "Psychometric properties" and "children" are also not MeSH terms, the reviewer recommend changing for "psychometrics" and "child".

The word “Psychometric properties" was changed for "psychometrics” (Line 57)

The word “Children” was changed for "child" Line 57

The word “CPQ11-14 was changed for “Child Perceptions Questionnaire” (Line 56)

Introduction

Page 3, lines 37-39: Please include the appropriate references after the following sentence: "Two questionnaires were designed for use in children aged 8-10 years (CPQ8-10) and 11-14 years (CPQ11-14).

The following references were added after the sentence: "Two questionnaires were designed for use in children aged 8-10 years (CPQ8-10) and 11-14 years (CPQ11-14) (Line 73):


Page 4, lines 7-9: Please revise the information about the absolute lack of evaluation of the oral health of the Lebanese child population, as a quick search on Pubmed resulted in some papers on the topic (such as Doumit M, Doughan B. Oral health in school children in Lebanon. Sante. 2002 Apr-Jun;12(2):223-8.).
The word “perception” was lacking in the expression “oral health”, inducing a misunderstanding of the sentence. The following sentences were corrected in the introduction section:

“The oral health conditions of Lebanese child population were investigated using clinical health indicators as DMFT, presence of malocclusion and dental fluorosis [20]. However, the oral health perception has never been assessed. Since clinical variables were found to be of limited use for determining therapeutic needs, subjective health indicators are to be considered in order to assess the degree to which oral conditions affect social performance and lead to major changes in health behavior [8]”. (Line 84 - 89)


Page 4, line 10: By generalised public health insurance system the authors mean universal?

The authors mean by “no generalized public health insurance system” that the Lebanese national social security fund does not cover dental health care. Therefore, Lebanese people pay for their dental treatment. We replace “generalized public health insurance system” with “public dental health insurance system” (Line 93)

Methods

Cross-cultural adaptation

This is my main concern with the paper. Only two minor changes were made to the already validated Arabic version of the CPQ11-14: the inclusion between parentheses of the translation in French of the word pipe and the exclusion of the item related to the difficulty encountered when playing a musical instrument, as only few Lebanese children have this hobby. It is not clear for this reviewer why a cross-cultural adaptation and further validation of the Arabic CPQ11-14 is required. Please clarify this aspect and the cultural differences that justify such a need in the introduction section.

We agree with the reviewer that the need of a cultural adaptation of an Arabic version of the CPQ11-14 is not obvious for a non-Arabic individual, and we realised that we have to develop this point.

According to Beaton et al (2002), the cultural adaptation is required when the questionnaire is used in different countries with similar language. The Arabic version of the CPQ is available but it was validated in Saudi Arabia. Before performing the study, we could not know “a priori” if a cultural validation was necessary, and for this reason the study should be done. Moreover, the discrepancies in health care systems, social and cultural aspects with other Arabic countries, suggested that it was necessary to verify the validity of the questionnaire.
Health care systems: Lebanon is a country characterised by a free economy with no public dental health insurance system; the dental care is therefore not accessible for children with low incomes. However, free public oral health services are available to Saudi Arabians.

Social and cultural aspects with other Arabic countries: The culture setting of Saudi Arabia is Arab and society is deeply conservative and traditional. However, Lebanon has an Arab culture with western influences because of the emergence of various civilisations over thousands of years and consequently is more culturally liberal. Lebanese society is similar to certain cultures of Mediterranean Europe as the country is linked culturally to Europe through France. The perception of quality of life and the ways in which oral health problems are expressed can be affected by cultural influences and beliefs. This disparity may alter the cultural equivalence and psychometric properties of CPQ. It is therefore highly recommended to pretest and assess the validity of the Arabic version of CPQ among Lebanese children.

Cultural Adaptation: The Arabic version of the CPQ11-14 was pre-tested on a sample of 25 Lebanese children aged between 11 and 14 years to ensure that the questionnaire has cultural equivalency and was appropriate for use in Lebanon. One modification was made to the item 14 by adding between parentheses the translation in French to the word pipe, because all children did not understand this word in Arabic since it is rarely used in Arabic in Lebanon.

The introduction section was modified as follows, lines 92-103:

Lebanon is a country characterised by a free economy with no public dental health insurance system; dental care is therefore not accessible for children with low incomes. Free public oral health services are available to Saudi Arabians [22]. In addition, the culture setting of Arabic countries is Arab and society is deeply conservative and traditional. However, Lebanon has an Arab culture with western influences because of the emergence of various civilisations over thousands of years and consequently is more culturally liberal [21]. The perception of quality of life and the ways in which health problems are expressed vary between countries and cultures with similar language [19]. These disparities may alter the cultural equivalence and psychometric properties of CPQ. It is therefore highly recommended to pretest and assess the validity of the Arabic version of CPQ11-14 among Lebanese children.

The following references were added:


Study population
Please describe sampling methods further. Were the schools randomly selected? How were students recruited within schools?

The study population section was modified as follows (lines 139-144)

Lebanese children aged between 11 and 14 years were recruited between March and June 2014 from five schools, a central public school and four private schools in Beirut and surroundings. Afterwards, the students were randomly selected within the schools. The recruitment was made from 3 grades to be within the interval 11-14 of age, by a randomization selection in each section from each grade in public and private schools. The selected children were invited to participate in the study.

Data collection

The paragraph was restructured in three sections: Study population, completion of the questionnaire and clinical data

Page 6, line 12: The fact that the research investigator was available to help participants with issues in understanding the questions can be considered as a source of bias.

We agree that the sentence induced misunderstanding, and we reformulate as follows (lines 149-153)

The questionnaires were completed during collective sessions in the classroom, in presence of the teacher. Before individual oral examinations, the research investigator presented the aim of the study. He provided technical information for completion of the questionnaires and collected the self-reported papers. Three children were excluded for behavioural problem during the session, and no difficulties were reported concerning the comprehensibility of CPQ.

Page 6, line 21-22: Please specify the instruments used for oral examinations.

The list of materials used for oral examinations was added in line page

Artificial light, equipment (gloves, mask and gauze pads) and pre-packaged sterilized instruments (single use mirror and WHO periodontal probe) were used for oral examinations. This was added in the material section of the manuscript, (lines 162-165).

The reference for the DMFT Index is not the original document, and no reference was included for the DAI Index. Please revise.

The original references for DMFT index and DAI indexes were added:

Cons NC, Jenny J, Kohout FJ: DAI: Dental Aesthetic Index. Iowa City: College of Dentistry, University of Iowa; 1986

Clearly state in the Methods section that the DMFT Index was used for dental caries assessment.

We stated in the Methods section (lines 165-166) that the DMFT Index was used for dental caries assessment.


Statistical analyses

Please review the accuracy of the words/terms "univariate", "multiple regression" and "multivariate analyses". I recommend checking the following paper: "Hidalgo B and Goodman M. Multivariate or Multivariable Regression? Am J Public Health. 2013 January; 103(1): 39-40".

We have checked the interesting paper “Multivariate or Multivariable regression” by Hidalgo B and Goodman M. We found that we used the term Multivariate inaccurately since we have one continuous outcome variable and multiple continuous and categorical predictors. Therefore, the term “multivariate” used in our manuscript was replaced with the term “multivariable or multiple linear regression models”). (line 227)

Moreover, the term “Univariate” was replaced with the term “bivariable” with one outcome variable and one exposure variable. (Line 222)

Page 8, line 7: Please include the cut-off value for missing teeth.

The cut-off value for missing teeth is: presence of missing teeth. It’s a dichotomous variable with two categories (yes >0 or no =0).

Page 8, line 29: Please change the word "of" ("Since the DMFT index is composed of the numbers…") for "by".

Line 224: The word “of” was changed into “by”

Results

Page 8, line 49: 693 students were included but how many were approached? Please include this information.

The information was included in lines 231-232:
Among the 764 school children eligible for the study, 43 (5.6%) did not return the signed consent form and 19 (2.5%) were absent from the school during the data collection. The sample was 702 Lebanese children aged 11-14 years recruited from the public and private schools. Three of them were excluded for behavioral problems during the completion of the questionnaire and six others did not cope enough for dental examination. Finally, 693 were included (response rate: 98.7%). The mean age was 13.14±0.82 years and 54.4% were boys.

Page 9, line 17: "Cronbach's alpha of the global CPQ11-14 score was 0.880 and varied from 0.897 to 0.908 when […]". Please revise the sentence as it is confusing and it seems like a confidence interval, although it is not. I would suggest changing for: "Cronbach's alpha of the global CPQ11-14 score was 0.880 and varied to 0.897 and 0.908 when […]".

The sentence was adjusted as suggested by the reviewer in line 248: Cronbach's alpha of the global CPQ11-14 score was 0.880 and varied to 0.897 and 0.908 when […]

Page 9, line 34: Please remove the - between the ICC and the p value.

Done, line 255

Page 9, line 51: The reviewer suggest changing the word "felt" for "reported".

Done, Line 262

Page 10, line 10: The authors are using both handicapping and very severe with the same meaning, please standardize.

The word “very severe” was replaced by “handicapping” to standardize (lines 182, 214, 245, 269, 323, 3250, Table 5)

Page 10, lines 22-27: Please standardize the way of presenting the cut-offs values for DMFT as in Page 8, lines 6-8.

The presentation of the cut-offs values for DMFT was corrected in lines 273-274 as follows: number of decayed teeth (⅔), number of filled teeth (> 2) and number of missing teeth (>0).

Discussion

Page 11, line 24: Please include the references of the mentioned Canadian and Italian studies.

The references of the mentioned Canadian [9] and Italian [30] studies were included, in lines 292.


Page 12, line 10: Include a reference for the first sentence.

Done, the following references were included at the end of the first sentence, lines 320:


Page 12, lines 15-17 and line 56: The sentences ("However, …" and "On the other hand, …") are obvious and should be removed, as the authors are just repeating the previously mentioned information from an inverse perspective.

Done, the sentences were deleted lines 323 and 344.

Page 13, line 12: Please remove the word "as" after clinical indicators.

Done, the word “as” was deleted line 352.

Author’s contributions:

"AK: performed the experiments; …". Please revise.

Performed the study instead of performed the experiments. It was corrected in the manuscript.

Table 4: The categories of the first question (How much do you like the look of your teeth) are labelled wrongly, please revise.

Done: Don’t like, moderately like, like a lot

Table 5: Malocclusion category: Please change Minor/none to None/minor.

Done: Minor/none were changed to None/minor in Table 5

Reviewer 2: Ankur Sin
The cross validation of a tool in a new context is valuable and that makes this an important work. This reviewer has main concerns regarding the discussion of the findings. The paper will also benefit from a thorough editing for language. The reviewer has made some suggestions/comments across the text for the consideration of authors:

Background:

1) The key rationale behind this research seems to be the contextual differences between Lebanon and other Arabian countries. The authors mention these differences as a free country without a generalised public health insurance system. The consequence of which is that the dental healthcare access is difficult for children with low incomes. However, these arguments are not supported by any reference nor they are elaborated enough to explain what consequences it may have on oral health related quality of life different to other countries where the Arabic version of the tool is validated. This elaboration is critical to prove the value in this work within the background apart from the overarching importance of measuring OHRQoL along with clinical measures. The discrepancies in health care systems, social and cultural aspects with other Arabic countries should be detailed rather than just mentioned. This is very important for an international audience.

The following corrections were made in lines 90-103.

The Arabic version of the CPQ validated in Saudi Arabia is available [17,18] and its cultural adaptation for a use in Lebanon is necessary because of the discrepancies in health care systems, social and cultural aspects with other Arabic countries [21]. Lebanon is a country characterised by a free economy with no public dental health insurance system; the dental care is therefore not accessible for children with low incomes. However, free public oral health services are available to Saudi Arabians [22]. In addition, the culture setting of Arabic countries is Arab and society is deeply conservative and traditional. However, Lebanon has an Arab culture with western influences because of the emergence of various civilizations over thousands of years and consequently is more culturally liberal [21]. The perception of quality of life and the ways in which health problems are expressed vary between diverse countries and cultures with similar language [19]. These disparities may alter the cultural equivalence and psychometric properties of CPQ. It is therefore highly recommended to pretest and assess the validity of the Arabic version of CPQ11-14 among Lebanese children.

The following references were added:


2) The authors mention that the aim was to test the reliability, reproducibility and convergent validity of the tool - It will be helpful to explain in the background or methods what each of these aspect of validation means and how likely the 'discrepancies' may impact each of these.

The means of each aspect of validation was explain in the statistical analyses section:

lines 188-189 and 194-195: “Reproducibility concerns the degree to which repeated measurements in stable persons provide similar answers”. …“….with a two-way random effects model; ICC=0.70 is recommended as a minimum standard for reliability [27]”.

lines 196-200: “Reliability or internal consistency is a measure of the extent to which items in a scale are correlated, thus measuring the same concept”. … “A low coefficient alpha would indicate that the items did not come from the same conceptual domain. A criterion of 0.6-0.9 is proposed to be a good reliability [29,30]”.

lines 200-209: Information for concurrent validity was already given in the submitted version of the manuscript.

line 211: Discriminant validity is the ability of CPQ to identify children with different oral health status.

Methods:

1) Sample size calculation should be a little more detailed. Is setting an arbitrary number at 600 based on previous study a standard method? The two referred studies are from Australia and Brunei and it will be helpful to justify the sampling procedure.

A number of 600 participants was set based on previous studies. Previous studies using the CPQ11-14 have used different sample sizes. The highest sample size was 561 schoolchildren in a study conducted in Italy by Olivieri A et al (2013). The sample size of the referred studies is presented in the following table. There were no specific guidelines with respect to appropriate sample power for testing the performance of the CPQ11-14, a sample size was proposed, as this was higher than that used in any previous study.

<table>
<thead>
<tr>
<th>CPQ11-14</th>
<th>Country</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Brazil

N=160
not calculated


New Zealand

N=430 not calculated


Canada

N=123 not calculated


Saudi Arabia

N=174 not calculated


Danish

N=225 not calculated

China
N=168 not calculated

Haji Amirul Rizan Bin Haji M. Epidemiological validation of a Malay version of the Child Perceptions Questionnaire (CPQ11-14) in Brunei. University of Otago. 2011

Malaysia
N=457 not calculated


Australia
N=468 not calculated


Italy
N=561 not calculated


UK
N=89 not calculated

The following corrections were made in lines 144-147:

There were no specific guidelines with respect to appropriate sample power for testing the performance of the CPQ11-14 [9-12,15,17,23,24]. Consequently, the number of participants was arbitrarily set at 600, taking into account that the highest sample size used in a previous study was 561 [25].
2) More clarification is also required regarding the sample selection and the choice of schools. In the discussion section authors have discussed at length regarding the socioeconomic differences according to school status (public vs private) while there is little variability as there was only one public school.

The corrections were made as follows, lines 139-144:

Lebanese children aged between 11 and 14 years were recruited between March and June 2014 from five schools, a central public school and four private schools in Beirut and surroundings. Afterward, the students were randomly selected within the schools. The recruitment was made from 3 grades to be within the interval 11-14 of age, by a randomization selection in each section from each grade in public and private schools. The selected students were invited to participate in the study.

Additionally, what level of individual variation in socioeconomic position of individual children within these schools is possible?

The authors removed from the discussion section the idea about socioeconomic differences between school statuses because it was not the aim of the study and because it could not be supported by references.

However, authors explained in lines 364-367 that students from public schools (free of payments) come from different social backgrounds than the private school children. This social background and family environmental variables may affect OHRQoL. These findings justify the fact that oral health perception can be affected by social influences.

3) There is little explanation regarding why dental caries and orthodontic treatment need were key clinical outcomes considered in the study?

This point is explained lines 309-313:

Dental caries assessment and orthodontic treatment need were used to assess the discriminant validity of the CPQ111-14 and to compare our findings with others studies [New Zealand, Saudi Arabia, Brazil, Italy and Malay]. Dental caries and malocclusion are of the most commonly studied oral diseases that interfere with the normal functioning of an individual’s life as pain, chewing difficulties and lack of sleep which impact learning and growth.

What about dental trauma?

Only four participants reported dental trauma during the last three months. The prevalence dental trauma was low (0.58%). This outcome variable was not included in the model for validity assessment.

4) It will be helpful to include references to justify the methods for testing reliability, reproducibility and concurrent validity in the section of statistical analysis.
The following references were added in the statistical analysis section, lines 187-211:


5) It will be helpful to define each of the assessment criteria within the methods section or use references: - test-retest reliability, reproducibility, and concurrent and discriminant validity. The analysis aspect covers their operationalization without definitions except for concurrent validity.

See the answer to point 2 of background paragraph.

Results

1) Where is the description of sample?

Line 230: In the result section, the subheadings “Characteristics of the participants” was replaced with “Description sample”

2) The authors have used adjective 'excellent' within the result section and there is no threshold to decide that. It is better to mention the findings and let readers interpret it within this section.

Line 255: The test-retest reliability of the overall CPQ11-14 was qualified as “high” instead of “excellent”.

Discussion

1) Avoid repeating results in the discussion section - (ICC=0.71).

The results of ICC=0.71 was removed from the discussion Line 297

2) Provide justification for this statement: - 'Values greater than or equal to 0.6 are considered acceptable'.

ICC=0.70 is recommended as a minimum standard for reliability. Reference [29] was included in line 298.
3) Where is the reference for Canadian and Italian studies?

The references of the mentioned Canadian [9] and Italian [30] studies were included, in lines 292.


4) Nowhere in the discussion section have the authors re-visited the claim of contextual differences between Lebanon and other Arabic countries where the tool has been validated. How were the current findings different to those?

The claim of contextual differences between Lebanon and Saudi Arabian was described throughout the Discussion Section.

Lines 300-308:

Explanation: In Lebanon, the reliability of the CPQ11–14 was appropriate and demonstrated the homogeneity of items, the test-retest findings revealed very good reproducibility for the overall CPQ11-14 and each of the underlying subscales. Concurrent validity demonstrated the associations between the CPQ11-14 scale scores and the global rating of oral health and general health. These findings were similar to that reported in Saudi Arabian study.

On the other hand, the Lebanese version of the CPQ11–14 was able to discriminate between Lebanese children according to DMFT index and malocclusion status. Participants with severe or handicapping malocclusion suffered from more functional limitations and oral symptoms and minor emotional and social well-being than participants with normal or minor malocclusion. Discriminant validity revealed higher OHRQoL scores for Lebanese children with an elevated DMFT index and a greater impact on oral symptoms, emotional and social well-being.

But, this was not the case in Saudi Arabia study, since malocclusion was not associated with oral symptoms, functional limitations and emotional well-being. Furthermore, DMFT was not related to emotional and social well-being and functional limitations. These discrepancies may justify the fact that quality of life and the ways in which oral health problems are expressed can be affected by cultural aspects, social influences and beliefs between Lebanese and Saudi Arabian children.
5) A large part of discussion section again tries to establish the rationale behind measuring OHRQoL in orthodontic children. This was not an aim of the study and not sure why it is discussed at this length.

Since measuring OHRQoL in orthodontic treatment was not the aim of our study, we removed the following sentences from discussion:

- “Therefore, orthodontists should consider not only the patient’s clinical characteristics but also their effects on OHRQoL.” Line 334

- “Assessment of oral health-related quality of life in orthodontics is essential for the study of treatment need, the effectiveness of treatment and the patient’s understanding of expectations. These measures focus on the patient and could help determine the outcome of orthodontic treatment”. Line 330-333

From the conclusion section we replaced the following sentence… “It was also demonstrated that, in Lebanon, severe malocclusion appears to have a negative impact on the OHRQoL of 11-14 year old adolescents. Further longitudinal studies are required to understand how this impact influences OHRQoL over time and whether the provision of orthodontic treatment has a positive effect” with : “It also indicates that the impact of child oral conditions on functional and psychosocial well-being is considerable, and that children are able to give psychometrically acceptable accounts of that impact. Further longitudinal studies are required to investigate its evaluative properties, and its utility as a clinical outcome measure in clinical trials.” Line 400-407

6) Similar to the last point, investigating the role of socioeconomic status was never an objective of the study and has been discussed in much detail. A lot of statements are made that require careful examination. For instance: "Many variables like parents' income and educational level, were used to evaluate socioeconomic level but this requires substantial efforts and is difficult in our society. Thus, the use of type of school as an indicator of socioeconomic status can facilitate epidemiological surveys of oral health." How is this challenge related to the objective of this study? What do the authors mean by substantial effort? It is not clear what sociological dimensions does the type of school capture and why are the authors instructing all future epidemiological studies to use 'type of school' as an indicator of SES.

We removed from the discussion section the idea about socioeconomic differences between school statuses because it was not the aim of the study and because it could not be supported by references.

However, authors explained that students from public schools (free of payments) come from different social backgrounds than the private schoolchildren. This social background and family environmental variables may affect OHRQoL. These findings justify the fact that oral health perception can be affected by social influences.
7) The authors have not presented the socio-economic characteristics of children and have neither described the sample. It is not clear why the shift in discussion from the findings on validation to the predictors of OHRQoL is made.

We removed from the discussion section the idea about socioeconomic differences between school statuses because it was not the aim of the study and because it could not be supported by references.

However, we explained that students from public schools (free of payments) come from different social backgrounds than the private schoolchildren. This social background and family environmental variables may affect OHRQoL. These findings justify the fact that oral health perception can be affected by social influences.

This is a problem with the discussion section and needs to be resolved. This is also apparent from the limitation "The cross-sectional design makes it difficult to evaluate the risk indicators of OHRQoL". First, this is not a limitation of cross-sectional design. Second, this was never the aim of the study.

This limitation was removed from the discussion section