Validation of the Child Perceptions Questionnaire 8-10 in Bosnia and Herzegovina

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ABSTRACT
Background: Paediatric oral disorders are numerous and it can be assumed that those have negative effect on the life quality in children. From 2002 to 2006 were developed the life quality measures for children aged 8-10 and 11-14 years, Child Perceptions Questionnaires, CPQs. Those are the components of the Child Oral Health Quality of Life Questionnaire (COHQOL). Aim: The aim of this study was to translate the CPQ for children 8 to 10 years into the one of the languages in Bosnia and Herzegovina, to cross-culturally adapt the instrument, and to evaluate its comprehensibility among Bosnian language speaking children. Methods: Instrument was translated from English into the Bosnian language according to the recommended translation procedure. After the cultural adaptation, questionnaire was tested among 8–10 years old children (N=18). Results: During the cultural adaptation of the instrument, changes were made on three questions. One question had to be changed due to understanding difficulties. Conclusion: CPQ 8–10 was translated and culturally adapted. Testing among children showed that the Bosnia-Herzegovina version of the CPQ 8–10 is comprehensive and it can be used for measuring oral health-related quality of life in children this age. Key words: CPQ 8–10, translation, validation.

1. INTRODUCTION
Oral health-related quality of life (OHRQoL) is an important aspect of dental health. It describes the patient's self-perception of his or her current oral health status and its impact on his or her quality of life (1). Questionnaires for assessing oral health-related quality of life were mostly developed in English speaking regions and therefore can not be used in all countries. It is the reason why the translation and verification of those instruments are very important for precise and correct measurement of the life quality.

Questionnaires for adult population and for children 11 to 14 years have already been translated in Bosnia and Herzegovina (2, 3). In 2007, was developed the Early Childhood Oral Health Impact Scale (ECOHIS), with 13 items, for assessing oral health quality of life in children 3-5 years of age (4). The ECOHIS has been developed in the United States and it is a caregiver-rated questionnaire.

Measuring the OHRQoL in children, using the self-reported questionnaires, is associated with several difficulties. The children’s abilities to speak, read, think in abstract terms and their age-related ability to understand the concepts used in the questionnaire should be taken into account during the development of the OHRQoL instruments (5).

The Child Perceptions Questionnaires (CPQs) have been developed from 2002 to 2006 in Canada for measuring the OHRQoL among children aged 6 to 14 years (6, 7, 8). The CPQs are self-reported questionnaires. Many researches have demonstrated that children’s reports of their health-related quality of life are valid and reliable (6).

The CPQ 8–10 is a part of the Child Oral Health Quality of Life Questionnaire (COHQOL), which consists of a Parental-Caregiver Perceptions Questionnaire, a Family Impact Scale, and three age-specific questionnaires (CPQs) for children 6-7-, 8-10-, and 11-14-year-olds, because these groups are homogeneous in terms of roles and cognitive abilities. Three versions of CPQ are: CPQ6–7, CPQ8–10, and CPQ11–14. The Bosnia-Herzegovina version of the CPQ6–7 has been published (3). To this date, CPQ6–7 has not yet been developed.

The CPQs include four domain subscales of oral symp-
toms, functional limitations, emotional well-being and social well-being.

2. GOAL
The aim of this study was to translate the English version of the CPQ8-10 (Appendix 1) into one of the languages of Bosnia and Herzegovina, to culturally adapt the questionnaire according to the Bosnia and Herzegovina setting, and to evaluate its comprehensibility in a qualitative study.

3. METHODS

Original instrument
The original English version of the CPQ8-10 contains a total of 25 items: 5 questions on oral symptoms, 5 questions on functional limitations, 5 questions on emotional wellbeing and 10 questions on social well-being. Questionnaire has the introduction and two general questions about the age and the sex of the child. The main part of the questionnaire has 25 questions, numbered in standard order (from 1 to 25, see Appendix 1).

The response format for all main 25 questions is a Likert-like scale. Response options and scores are: "never", scoring 0, "once or twice", scoring 1, "sometimes", scoring 2, "often", scoring 3 and "every day or almost every day", scoring 4.

An overall CPQ8-10 score should be computed by addition of all item scores, and scores for each of the four domains also. The total score can vary from 0 to 100. The questions should, according to the authors of the original questionnaire, refer to the period of the past 4 weeks.

Translation of the CPQ8-10 questionnaire
The English CPQ8-10 version (Appendix 1) was translated into one of the languages in Bosnia and Herzegovina using the forward-backward technique for translating questionnaires (9). Translation from English into Bosnian was performed by four native-speaking Bosnian investigators. First translator was a dentist, previously participated in the translation of the Oral Health Impact Profile and the CPQ11-14 (2,3). Second translator was the pediatrician who works with children on daily basis, and who participated in the development of the CPQ11-14 (3). Third translation was made by a certified translator. All three translations were debated and after the debate we had the first version of the Child Perceptions Questionnaire 8-10. The Bosnia-Herzegovina version of the CPQ8-10 was back-translated into the English language by another licensed translator. This translated version was compared to the original questionnaire.

Cultural adaptation of the CPQ8-10
Procedure for cross-cultural adaptation was conducted according to the internationally accepted methods (10). Bosnia and Herzegovina version was reviewed once again by the dentist and the pediatrician. The criteria of clarity, through the use of simple, easily understood expressions, and avoiding the use of technical terms, were also evaluated, beside the criteria of crossing cultural differences between Canada and Bosnia-Herzegovina.

Field study for assessing the comprehensibility of the questionnaire
After the preliminary version of BH-CPQ8-10 was made, we assessed its comprehensibility in a qualitative study.

To be included in the study, children had to be 8-10 years old and native Bosnian-speakers. The field study was carried out in The Canton Health Centre “Dom zdravlja Stari Grad”, Sarajevo, Department of Dentistry and in The Department of Pediatrics-School Section. All children were intervieweed while waiting for the appointment at the pediatrician or the dentist, regardless they had some acute dental/general health problem or not. The BH-CPQ8-10 was applied in a form of an interview. The questionnaire refered to the past four weeks. We focused on the comprehensibility of the words used in every item and on the sentence construction. Subjects were randomly selected (N=18).

The introduction, two general and 25 main questions were read to the children from the printed questionnaire. Interviewer wrote the answers.

Time required for the completion of the questionnaire was not measured individually for each child, because the aim of the study was to test the language characteristics and comprehensibility of the questionnaire only. Answers were not statistically analyzed, because this was a qualitative study on the comprehensibility of the questionnaire.

Study was in accordance with the ethical standards and Declaration of Helsinki. For every child a written consent from the caregiver was obtained before a child’s verbal assent.

4. RESULTS
Comparison between the original and the back-translated version demonstrated that two versions are more or less equivalent, which called for only minor adjustments of the Bosnia-Herzegovina version.

During the cross-cultural adaptation, we made changes on three questions.

In original question no. 7: „Have you had a hard time biting or chewing food like apples, corn on the cob or steak, because of your teeth or mouth?” we changed the word „steak”, which could be translated in Bosnian language as „odrezak”, into „meso/meat”, which is more suitable for the nutritional habits of children in Bosnia and Herzegovina, and more comprehensive to them.

In question no. 12, we changed the Bosnian word „frustriran”, to the more simple word „nezadovoljan”.

In question no. 23: „How often did you stay away from activities like sports and clubs because of your teeth or mouth?” we changed the equivalent, but not so familliar Bosnian word „klub” into „vanškolska aktivnost/extracurricular activity”.

After the cross-cultural adaptation, instrument was tested among 18 children to assess the comprehensibility. Questionnaire was applied on 11/18 or 61% girls, and 7/18 or 39% boys. Second and third child of those 18 subjects had difficulties to understand the question no. 12: “Koliko često u zadnje četiri nedelje si bio/bila nezadovoljan/na zbog svojih zuba ili usta ?”. This question was replaced with: “Koliko često u zadnje četiri nedelje si bio/bila nezadovoljan/na svojim zubima ili ustim ?” and later applied to the children that followed. After we made this change, further explanations at any question were not necessary.

We had no invalid questionnaires. All 18 children answered to every item of the questionnaire.

This stage resulted with the final version of BH-CPQ8-10.
5. **DISCUSSION**

Measures which address the oral health-related quality of life (OHRQoL) are being used with increasing frequency in epidemiological surveys in dentistry. Many OHRQoL measures have been developed until today (11, 12, 13). However, before 2002, they were all designed to assess OHRQoL in adult populations.

The absence of pediatric OHRQoL measures, before ECOHIS and CPQs were developed is due to the specific psychological development process in children (14). Many abilities in children are age-dependent and those differences in the cognitive, emotional, functional, and behavioral characteristics must be accommodated within a child health status questionnaire (14, 15).

Early attempts at measuring the health-related QoL in children used questionnaires for parents. While parents are useful as informants, their reports for children older than 6 are considered as complementary to and not substitutes for child reports. Analysis of the data presented elsewhere showed that the questionnaires for children older than 6 had good reliability (6, 7).

A study sample of 18 children may seem too small. One similar publication presented the validation of Portuguese version of the OHIP-49 (16). The study sample for evaluation of the language used in the instrument consisted of 10 persons selected randomly from the main sample. After this pilot-study, some items were adjusted to clarify questions, which resulting in the final version of the Portuguese OHIP-49.

6. **CONCLUSION**

The CPQ8-10 was translated from English into Bosnian language and culturally adapted. Comprehensibility of the measurement was tested in a qualitative study. Testing in a sample of children revealed that Bosnia and Herzegovina version of the CPQ8-10 seem to be a valid instrument for measuring oral health-related quality of life in children. Questionnaire can be useful in many aspects, in evaluation of dental therapy, in epidemiological surveys and in oral health promotion. The main purpose of this study, to make CPQ8-10 ready for use in Bosnia and Herzegovina, has been accomplished. Longitudinal studies are necessary to determine its construct validity, responsiveness, and internal consistency.

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**REFERENCES**

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**Appendix 1**

**Child Perceptions Questionnaire 8-10**

**CPQ 8-10**

**CHILD ORAL HEALTH QUESTIONNAIRE**

Subject Number:

Hello,

Thanks for helping us with our study!

We are doing this study to understand better things that may happen to children because of their teeth and mouth.

Please Remember:

1. Don’t write your name on the questionnaire.
2. This is not a test and there are no right or wrong answers.
3. Answer as honestly as you can.
4. Don’t think about anyone else when you answer the questions.
5. Read each question carefully and think about the things that have happened to you in the past 4 weeks.
6. Before you answer, ask yourself: “Does this happen to me because of my teeth or mouth?”
7. Try to answer the question that is best for you.

**FILL IN THE NUMBER THAT IS BEST FOR YOU:**

**1.** How old are you? _________________

**2.** Are you a boy or a girl?

**3.** In the past 4 weeks, how often have you:

- Had a toothache or mouthache?
- Had a bad toothache or mouthache?
- Had a tooth that hurt when you eat something cold?
- Had a tooth that hurt when you eat something hot?
- Had a tooth that hurt when you drink something cold?
- Had a tooth that hurt when you drink something hot?
- Had a tooth or mouth that was sore?
- Had a tooth or mouth that was sore when you ate?
- Had a tooth or mouth that was sore when you drank?
- Had a tooth or mouth that was sore when you ate or drank?
- Had a toothache or mouthache that lasted more than 4 weeks?
- Tried to talk to other kids about your teeth or mouth?
- Stayed away from activities like sports and clubs because of your teeth or mouth?
- Missed school because of your teeth or mouth?
- Had a hard time paying attention in school because of your teeth or mouth?
- Had a hard time doing your homework because of your teeth or mouth?
- Had a hard time eating because of your teeth or mouth?
- Needed longer time than others to eat your meal because of your teeth or mouth?
- Worried that you are not as good-looking as others because of your teeth or mouth?
- Been shy because of your teeth or mouth?
- Felt frustrated because of your teeth or mouth?
- Been upset because of your teeth or mouth?
- Had trouble eating foods you would like to eat?
- Had a problem sleeping at night because of your teeth or mouth?
- Felt like you were not as good as others because of your teeth or mouth?
- Stayed away from other people because of your teeth or mouth?
- Wanted to be with other children because of your teeth or mouth?
- Had trouble talking to other children because of your teeth or mouth?
- Tried not to smile or laugh when with other children because of your teeth or mouth?
- Needed longer time than others to eat your meal because of your teeth or mouth?

**5.** In the past 4 weeks, how often have you:

- Bad breath?
- Food stuck in your teeth?
- Pain in your teeth when you drink cold drinks or eat foods?
- Sore spots in your mouth?
- Bad breath in the past 4 weeks?
- Food stuck in your teeth in the past 4 weeks?
- Pain in your teeth or mouth in the past 4 weeks?
- Sore spots in your mouth in the past 4 weeks?
- Other children teased you or called you names because of your teeth or mouth?
- Other children asked you questions about your teeth or mouth?
- Other children said you were afraid of your teeth or mouth?
- Other children teased you or called you names because of your teeth or mouth?
- Other children asked you questions about your teeth or mouth?
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Često □
Svaki dan ili skoro svaki dan □

2. Koliko često si imao / la bolne tačke u ustima u zadnje četiri sedmice?

Nikad □
Jednom ili dvaput □
Ponekad □
Često □
Svaki dan ili skoro svaki dan □

3. Koliko često u zadnje četiri sedmice si osjećao/la bol u zubima?

Nikad □
Jednom ili dvaput □
Ponekad □
Često □
Svaki dan ili skoro svaki dan □

4. Koliko često si imao / la bolne tačke u ustima u zadnje četiri sedmice?

Nikad □
Jednom ili dvaput □
Ponekad □
Često □
Svaki dan ili skoro svaki dan □

5. Koliko često u zadnje četiri sedmice si osjećao/la bol u zubima kada piješ hladne napitke i nešto jediš?

6. Koliko često u zadnje četiri sedmice ti se zadržavala hrana na zubima u zadnje četiri sedmice?

7. Koliko često u zadnje četiri sedmice ti je trebalo više vremena nego drugima da pojedete svoj obrok zbog zuba ili usta?

8. Koliko često u zadnje četiri sedmice si osjećao/la neugodan miris iz usta zbog zuba ili usta?

9. Koliko često u zadnje četiri sedmice te je trebalo više vremena nego drugima da pojedete svoj obrok zbog zuba ili usta?

10. Koliko često u zadnje četiri sedmice te je često bilo teško zagristi ili sažvakati jabuku, kuhani kukuruz na klipu ili meso zbog zuba ili usta?

11. Koliko često u zadnje četiri sedmice te je često bilo teško jesti hranu koju si željela/lio zbog zuba ili usta?

12. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

13. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

14. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

15. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

16. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

17. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

18. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

19. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

20. Koliko često u zadnje četiri sedmice te je često bilo teško izgovoriti neke riječi zbog zuba ili usta?

The English version of the CPQ8-10 is available elsewhere (7).