

## Oral Health Related Quality of Life and Dental Anxiety in Children with Malocclusion between 11-14 years Old

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### Abstract

The aim of this study was to assess the level of dental anxiety and quality of life related to oral health in children with malocclusion between 11-14 years old. Materials and Methods: In this cross-sectional study 92 children with malocclusion and 35 children with dental caries were included. Short form of Child Perception Questionnaire (11-14) and Cora Dental Anxiety Scale Questionnaire were delivered to children in both groups. Collected data were analyzed using SPSS 17. To test statistical difference student's t test was used. Results: Dental Anxiety was higher in the group of children with dental caries  $p < 0.01$ , There was significant statistical difference between gender as girls scored higher in both groups  $p < 0.01$ . Regarding of negative emotions on Oral health Quality there was no significant statistical difference between two groups except on Oral Symptoms where significant statistical difference was found  $p < 0.01$ . Conclusion: High level of dental anxiety during dental treatment and poor quality of live in children should be an alarm, therefore comprehensive programs and strategies should be developed in order to manage children of this category.

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### Introduction

Oral diseases have a significant impact on quality of life and behavioral problems in children.<sup>1</sup> Malocclusion is the third most prevalent oral disease, dental caries being the first,<sup>2</sup> and is considered a public problem because of its high prevalence rate.<sup>3</sup> According to different studies teenagers who sought orthodontic treatment, especially those with more serious malocclusion, have shown a lower quality of life regarding to oral health than those who did not seek orthodontic treatment.<sup>4,5</sup> Measuring the quality of life as a method is a relatively new domain in orthodontics and is being developed and advanced rapidly.<sup>6</sup> Quality of life is being advanced not only for children and orthodontic but for elderly and other dental specialties as well.<sup>7</sup> Special instruments have been developed for the assessment of the impact of orthodontic

malocclusion and dental anxiety of the oral condition in the quality of life of children. These instruments collect data using self reporting evaluation (questionnaire or interview) such as Child Perception Questionnaire (11-14) short version and Corah's Dental Anxiety Rate. The experience of pain during dental treatment increases the risk of dental anxiety which causes absence of visits to the dentist, and is related with damages of the oral health. Studies have identified a strong link between dental anxiety and oral health,<sup>8</sup> and have also shown that both, dental anxiety and orthodontic malocclusion have an impact on patients lives in general.<sup>4,5,6,9</sup> Based on studies, anxious children have suffered significantly more traumatic visits than non-anxious children. Level of child dental anxiety is influenced by different factors such as: child's personality, family relations<sup>10</sup> socioeconomic status (reduced use of health services<sup>11</sup> etc. Dental anxiety is a frequent cause of rejection and avoidance from dental treatment cites another study<sup>12,13</sup> therefore it is very important to understand the influence of malocclusion in children's quality of life and level of dental anxiety they experience during dental interventions.

The purpose of this study was to assess the level of dental anxiety and quality of life

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related to oral health in children aged 11-14 years old with malformations.

**Materials and methods**

The study was conducted at the Clinical Centre of Dentistry in the Department of Orthodontics in Prishtina and in the Municipal Centre of Family Medicine in the Department of Dentistry in Prizren.

It was carried out in accordance with recommendations of Helsinki Declaration. Written consent was taken from all subject's parents before filling any questionnaire. This is a cross-sectional study which included two groups of children between 11 to 14 years old (66% females). In the first group 92 children with malocclusion, in the second group or the control group 35 children with dental caries were included. Short form of Child Perception Questionnaire (11-14) and Cora Dental Anxiety Scale questionnaire were filled from children in both groups.

Cora's Dental Anxiety rate is a test which measures the degree of dental anxiety. It consists of 4 questions and the answers are based on Likert scale from 1 to 5. (not anxious 1, slightly anxious 2, fairly anxious 3, very anxious 4, extremely anxious 5)

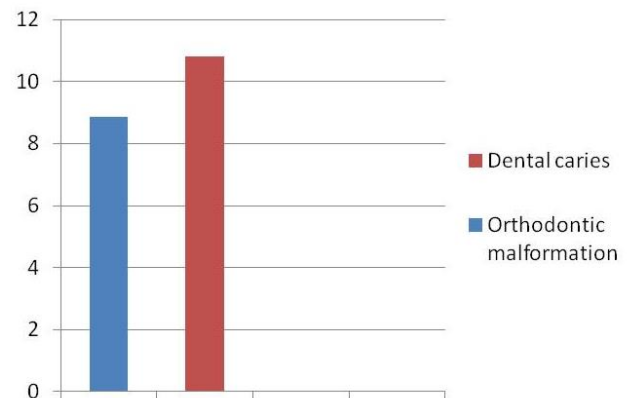
Child Perception Questionnaire (11-14) short version is a self reporting tool for measuring quality of life associated with oral health in children of this age group.

Exclusion criteria were as follow: children with mental disorders, neurological and congenital syndromes.

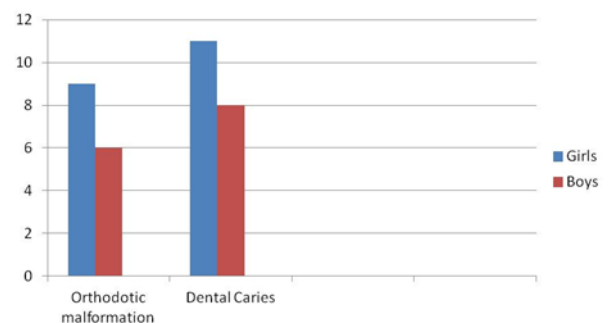
Data analysis was conducted with the Statistical Package for Social Sciences (SPSS 17). Statistical testing for significant difference between groups was carried out with the student's t-test. Level of significance was set 5%.

**Results**

The average degree of dental anxiety in the group with malocclusion was  $8.86 \pm 2.78$  whereas in the control group children with dental caries  $10.80 \pm 2.75$ , with a significant statistical difference between groups based on the student's t-test for  $p < 0,001$ . (Figure 1).



**Figure 1.** Level of Dental Anxiety according to groups.  $p < 0.01$ ;  $p < 0.01$



**Figure 2.** Level of Dental Anxiety according to gender

Five dimensions of OHRQoL	Orthodontic malformation group			Dental caries group			p*
	Mean	SD	SEM	Mean	SD	SEM	
Oral symptoms	30.67	13.11	4.37	11.67	10.59	3.53	0.0038
Functional limitations	30.67	13.65	7.88	11.67	3.06	1.76	0.0783
Emotional well-being	30.67	14.64	8.45	11.67	9.61	5.55	0.1334
Social well-being	30.67	8.14	4.70	11.67	12.01	6.94	0.0860

**Table 1.** Four dimensions that have an impact in the situation of oral health in the quality of life of children aged 11-14 years. \*student's t test; OHRQoL-Oral Health Related Quality of Life

Girls have shown higher levels of anxiety in both groups with an average of  $10.05 \pm 2.53$  while the average for boys was  $8.16 \pm 3.15$  with a significant statistical difference between the two genders compared with student's t-test  $p < 0.001$  (Figure 2).

When data were analyzed in accordance with Child Perception Questionnaire in order to assess subject's Quality of Life, significant statistical difference between groups with malocclusion and dental caries was observed only on oral symptoms and not in other dimensions (Table 1).

## Discussion

In our study dental anxiety during treatment procedures in the group of subjects with malocclusion was lower than the group with dental caries. The reason for this difference might be because children who have dental caries or cavities face a possibility of feeling pain as treatment of dental caries requires a more invasive approach. Level of dental anxiety was higher in girls than boys in both groups and we have same results as Carrillo Diaz et.al<sup>13</sup> but different from Akbay Oba et.al<sup>14</sup> where they found no significant statistical difference between genders.

Regarding of the experience of negative emotions or impact on Oral Health Quality even though the level indicated was high in both groups there was significant statistical difference only in one dimension, oral symptoms. In all other dimensions there were no significant statistical differences. One possible explanation for differences in only this dimension could be because patients with malocclusion have ability to cope with challenges and adapt more easily with their condition than dental caries group.

The high level of negative emotional experience reported in the two groups is the cause of the poor quality of life associated with oral health as reported in the study. Oral health related quality of life is affected both, by dental caries<sup>15</sup> and orthodontic malocclusion and different studies show that they have high prevalence that's why further studies for improvement of these factors should be done.<sup>16</sup>

## Conclusion

High level of dental anxiety and negative emotional experience can have consequences as it can lead to damage of oral health and overall quality of life, these data should be reported and serve for the development of a comprehensive program in our country in order to have a successful management strategy of children's behavior that involves the management of their anxiety and improvement of child's life quality.

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## Declaration of Interest

None to declare.

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