

# Assessment of Oral Health in Children Aged 0-6 Years

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**Abstract:** *Dental caries is one of the most common chronic diseases of early childhood. Dental caries in young children frequently leads to pain and infection necessitating hospitalization for dental extractions, sometimes under general anesthesia. The aim of the study was the assessment of the reasons for presenting to the dental practice and the oral health of children aged 0-6 years. The study comprised 97 patients in the preschool age (2-6 years), who for the first time ever reported in 2015 to the dental practice in a clinic in Tirana city. Half of the respondents did not exceed 5 years, mean age was 4.32 years. Girls accounted for 58%, while boys accounted for 42% of the participants. The main reason for reporting to the dentist was a check-up visit – such an answer was given by 84% of the parents surveyed, while the toothache was the cause of reporting for 16% of the respondents. The dmf index equaling to 0 occurs more frequently in girls (31.0%) than boys (13.0%) (p=0.02). Implementation of an oral health program for children attending public nursery schools should be a high priority. Such a program should include not only preventive measures but also curative treatment of the affected primary teeth, in order to allow for permanent teeth to erupt under more favorable conditions.*

**Keywords:** primary teeth, caries, dmf index, prevention

## 1. Introduction

Dental caries is one of the most common chronic diseases of early childhood (1). Dental caries in young children frequently leads to pain and infection necessitating hospitalization for dental extractions, sometimes under general anesthesia (2). Dental problems in early childhood have been shown to be predictive of future dental problems, growth and development by interfering with comfort, nutrition, concentration, and school participation (3). Early childhood caries (ECC) is a serious public health problem in both, developed and developing countries. It affects infants and toddlers worldwide. ECC prevalence varies from population to population; but, children of disadvantaged populations have been found to be most vulnerable (4). The prevalence of ECC in these developing countries are reported to be as high as 70%. As for preschool health, dental caries is still a common disease of the deciduous dentition, of an infectious, multifactorial, and chronic nature. Early caries is defined as the presence of one or more decayed or restored tooth surfaces or extraction of any deciduous tooth in children 71 months of age or younger (5). Early caries affects not only oral health, since compromised deciduous dentition increases the risk of caries in the permanent teeth, but also the child's physical, emotional, and cognitive development (6-7). Biological factors and behavioral attitudes related to the etiopathogenic mechanisms of early caries, like the presence of specific microorganisms, a sugar-rich diet, inadequate oral hygiene, and presence of enamel hypoplasias are well established (8-9). Living conditions and psychosocial aspects of the family context can also contribute to the development of caries, including mental disorders and cognitive factors (10). Multivariate analyses and longitudinal studies on this topic are rare. The aim of the study was the assessment of the reasons for presenting to the dental practice and the oral health of children aged 0-6 years.

## 2. Material and Methods

The study comprised 97 patients in the preschool age (2-6 years), who for the first time ever reported in 2015 to the dental practice in a clinic in Tirana city. We analyzed the gender, age, place of residence and the reason for the reporting. The reason for reporting to the dental practice was a checkup visit, toothache, or loss of filling. Dental condition was assessed by calculating the dmf index. The results were analyzed using the Mann-Whitney U test, Student's t-test with grouping variable and Chi-square test for comparison of proportions between variables.

## 3. Results

The study comprised 97 children aged 2-6 years. Half of the respondents did not exceed 5 years, mean age was 4.32 years. Girls accounted for 58%, while boys accounted for 42% of the participants. The main reason for reporting to the dentist was a check-up visit – such an answer was given by 84% of the parents surveyed, while the toothache was the cause of reporting for 16% of the respondents. In the analyzed group of children, we found that the number of carious lesions ranged from 0 to 20. In half of the respondents the number d was not higher than 3, while the average number d for all respondents was 3.9. For further analysis, the children were divided into two groups. The first group included patients who showed no evidence of tooth decay (d=0), the second one, in which the d value was higher than 0. It was calculated that in 39% of girls and 17% of boys the d value was 0, while the incidence of tooth decay was observed in 66 of girls and 87% of boys with a statistically significant difference (p=0.04) (Fig. 1). A statistically significant relationship was found between the cause of the child referring to the dentist and the number of cavities. Among the children who referred to a dentist for a check-up visit, the average number d was 4.2, while the average value of the number d of children who came with

toothache was 9.8. The number of primary teeth missed as a result of dental caries (m) was in the range 0-2. In 85 out of 97 children tested, the number m was 0, therefore, the variable “m” was not subjected to statistical analysis. The number of fillings (f) was in the range 0-7; in half of the tested respondents the number f was equal to 0, whereas the average number of fillings in the studied group of children was 1.9. The children participating in the research were divided into two groups for further statistical analysis, taking into account the dmf index. The first group consisted of children whose dmf index was equal to 0, while the other group included subjects for whom dmf index was higher than 0. The dmf index equaling to 0 occurs more frequently in girls (31.0%) than boys (13.0%) ( $p=0.02$ ) (fig. 2). Even though the prevalence of dental caries has declined over the last few decades, mainly as the result of using fluoride, there is still a long way to go in eliminating the disease in the whole population. In this study, the prevalence of dental caries was greater than that established as a goal by the WHO for the year 20004, since only 31.1% of the children at 5 years of age were caries-free. As observed in other studies the number of children affected by the disease increased with age, being the percentage of children with  $dmf > 0$  at 5 years old almost 2 times greater than at 3 years.

#### 4. Conclusion

In light of these results from our survey, one can conclude that implementation of an oral health program for children attending public nursery schools should be a high priority (11). Such a program should include not only preventive measures but also curative treatment of the affected primary teeth, in order to allow for permanent teeth to erupt under more favorable conditions. The educational program should emphasize prenatal orientation for groups of pregnant women as well as professional training for preventive attention to babies (0-3 years) in order to encourage healthy oral habits during this period (12). As a standard requirement, pre-school education institutions should have to establish methods for caries prevention, for example, brushing teeth with fluoride toothpaste and limiting sugar-containing takeaway food and beverage consumption, to provide adequate nutrition for children (13). “Child health monitoring of children up to 3 years of age” details information about children's oral care to include in the family doctors' guides.

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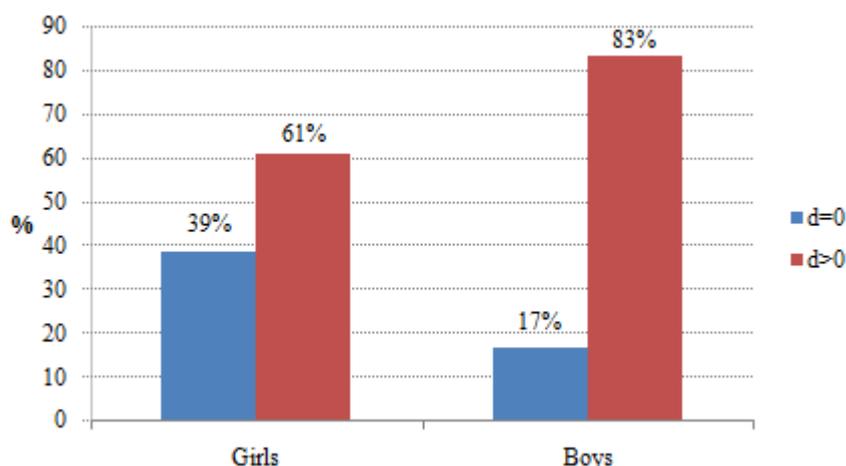


Figure 1: The value of the number d by gender

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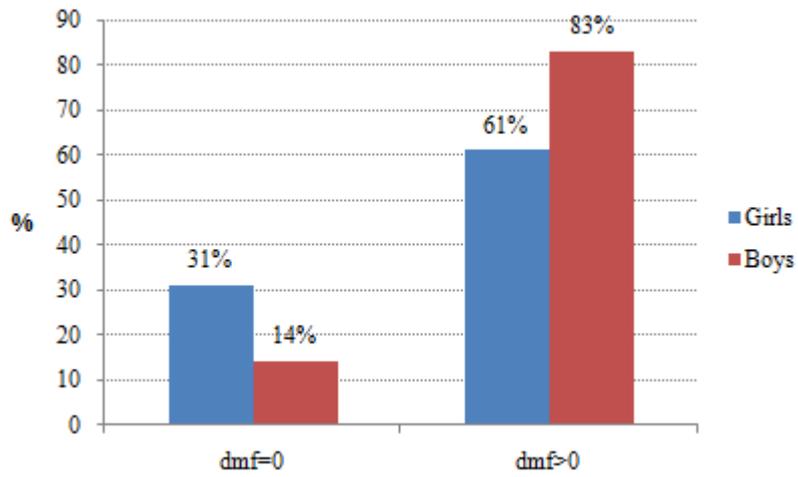


Figure 2: The dmf index by gender