

A STUDY CONCERNING TOOTH DECAY INCIDENCE IN CHILDREN WITH AGES BETWEEN 3 AND 6 YEARS

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ABSTRACT

Deciduous teeth cavities represent a frequent type of illness, which constitutes one of the most important dental health problems in pre-school children, caused by the direct implications and the possible consequences that it may have on permanent teeth. Even if a decrease in the incidence of dental cavities is registered in the industrialized countries of the world, when it comes to deciduous teeth, the frequency of the cavities is still high, at least for some certain social groups of the population. The purpose of the study is to collect current data on dental morbidity in the preschool population. There is not as much data concerning dental health in pre-school children as there is about school children, the reason being that preschool children are more difficult to consult. Material and Method: The study was conducted in a pediatric-clinic in Bucharest for a period of 5 years (jan. 01, 2013-dec. 31, 2018). The children included in the study are children who have had tooth decay. The number of children who participated in the study is 276. Results and Discussions: Of the 276 children studied, the highest incidence of tooth decay was for the age group between 3-4 years. This may signify, on one hand, a relatively high number of cavities at a young age, and on the other hand, the level of parental interest in dental care. Conclusions: The main conclusion of our study highlights the need to establish dental health education programs in both national and community level, where kindergartens and schools, have a great potential for influencing dental health care habits in children.

Keywords: dental decay, preschoolers, deciduous teeth

Introduction:

Tooth decay, or dental caries, in deciduous teeth, represent a common form of dental illness that constitutes one of the major dental problems encountered by pre-school children (1), both because of the direct implications and the likely consequences on their permanent teeth.

From the study of the specialized literature it follows that approximately 2.3 billion people are affected (2), of which 620 million are under 18, meaning 6% of the world's population (3). This illness has equally affected both adults and children (4).

Dental cavities are quantified in the dental

office by examination and recording of both treated and untreated lesions of teeth. (5) Dental caries are more common in the developed world due to the high consumption of refined sugar (6), sugar is the main source of energy for bacteria, and therefore sweets represent the source of risk. (7).

Tooth decay constitutes one of the major dental problems encountered by the preschool children, therefore even if they have temporary teeth, it is very important to remain healthy so that children can have a proper mastication. and last but not least, from the orthodontic point of view, temporary teeth are the best maintainers of space (8).

Cavities on temporary teeth may appear very early - the first signs of cavities are being described under the age of 3 (9). Following a study on a group of children, Luca and colleagues reported in 2010 that over one third of the total erupted temporary molars were unaffected by caries (10).

Although in the world's richest countries there is generally a decrease in cavity frequency, however, in temporary dentition, the frequency continues to be high and it is sometimes associated with low living standards and poor hygiene (6,11).

The aim of the study was to collect current data on dental morbidity in the preschool population. The level of temporary tooth morbidity is a good indicator for the future health of mature dental status and as well as for the level of education in what regards a good dental hygiene. There is not as much data concerning dental health in preschooler children as there is about school children, the possible reason being that preschooler children are more difficult to consult.

Material and Method:

The study was conducted in a pediatric medical facility in Bucharest for a period of 5 years (01.01.2013-31.12.2018). The children included in the study are children which have experienced tooth decay. The number of children who participated in the study was 276.

Each age segment was analyzed by social background, gender distribution, tooth decay incidence, their particularities and the way they act and evolve.

A complex questionnaire on the dental health state, periodontal condition and oral mucosa was used - with the measurement of possible dento-maxillary abnormalities. All the ethical principles, necessary to preserve the requested anonymity of the investigated subjects, were respected.

Results and discussions:

Of the total number of new patients, only 47% presented tooth decay. The remaining 53% came for other affections (Figure 1).

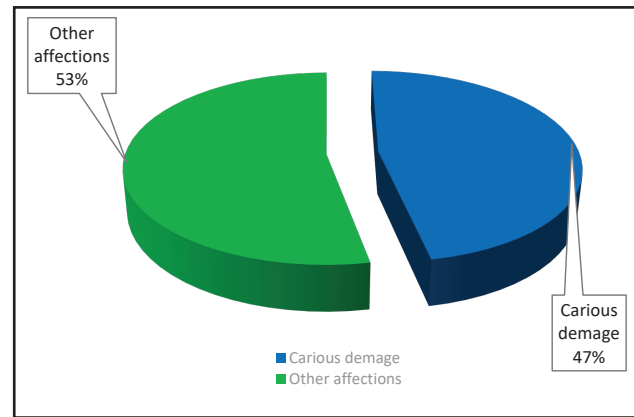


Figure 1 Percentage of carious damage

Of this 47%, only 28% are aged between 3 and 6 years. Although the incidence of cavities is higher, only part of the patients have consulted specialist services, for various reasons. During these five years, 276 children aged between 3 and 6 years were diagnosed with tooth decay. Among these, the age distribution looks like this (Figure 2):

- In the age range 3-4 years - 112 patients were included
- In the age range 4-5 years - 83 patients were included
- In the age range of 5-6 years - 81 patients were included

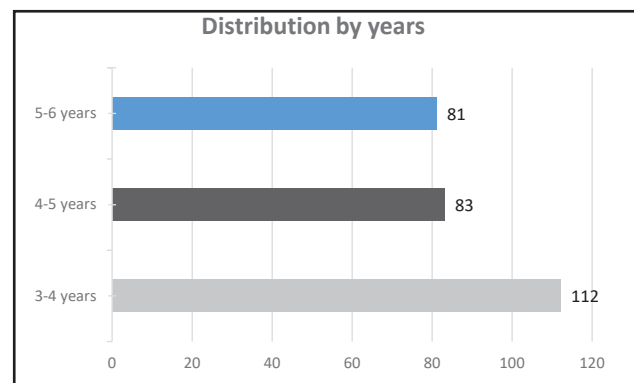


Figure 2 Distribution by years

From the data obtained in the study it can be observed that the highest incidence in all age ranges is the baby bottle tooth decay (with 154 cases) followed by complicated decay (with 76 cases), the incipient decay (with 30 cases) and the rampant decay (with 16 cases) (Figure 3).

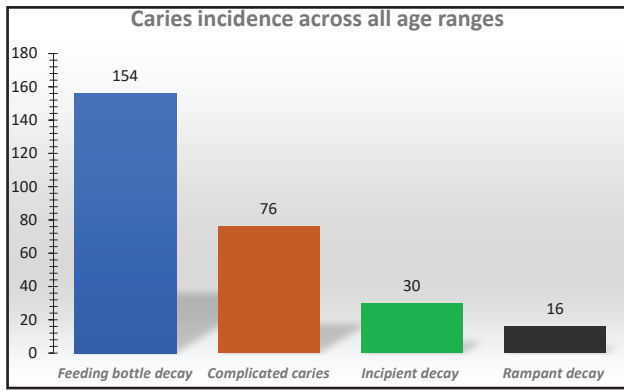


Figure 3 Incidence across all age ranges

For patients aged 3-4 the following data has been obtained from the study:

- The most frequent tooth decay at this age is the baby bottle tooth decay due to prolonged inadequate feeding with the baby bottle;
- Both sexes are equally affected;
- The urban environment predominates.

Data for the 4-5 age interval are similar to the data from patients aged 3-4 years, with small changes in the incidence of baby bottle tooth decay. Not because they did not appear in this time, but because the patients were already brought by their parents and asked for specialist assistance earlier. The facial appearance is determinant, because in baby bottle tooth decay the coronary destruction is dramatic and the aesthetic effects are obvious.

For patients aged between 5 - 6 years, the decay incidence is different. This period is characterized by the eruption of the 6-th year molar in the oral cavity. Because this tooth breaks out behind the deciduous molars, its eruption goes sometimes unnoticed. In addition, dental hygiene is not always satisfactory, making it vulnerable to decay. For this reason, in this age period a carious pathology emerges at the level of the first permanent molar.

From the study group of 276 children the highest incidence of tooth decay was for the age group of 3-4 years. This may mean, on one hand, a relatively large number of carious processes develop at a young age, and on the other hand, the lowered interest of parents for dental medical assistance. Their guidance toward dental care services can only benefit their children, both through the early solving of dental problems

arising from different causes as well as by the appropriation of proper brushing techniques and indications of food hygiene.

It can be seen that within the study groups, the age range of the group increases - the incidence of new caries decreases (Figure 4).

The most frequent dental disease in patients regardless of the age group is the baby bottle tooth decay. This is a type of decay with acute evolution and local consequences and sometimes even with general health and development consequences.

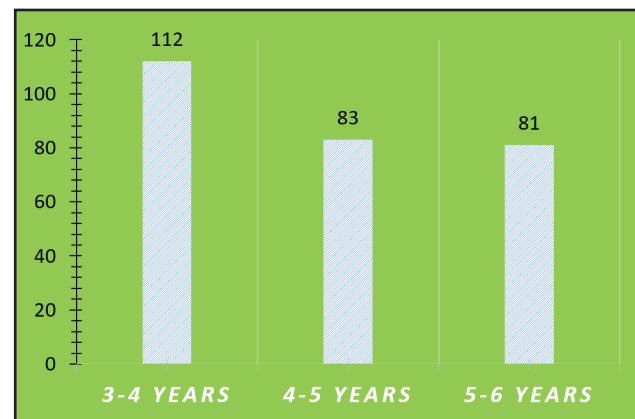


Figure 4 The incidence of carious processes by age

Children with baby bottle , tooth decay are developing with a slower evolution rate than children without cavities, and some of them are underweight due to feeding difficulties caused by dental pain and severe tooth destruction. Generally, this type of cavity has a negative influence on the quality of the child's life. It is present in 55.79% of the cases, which means 154 cases. It is followed by complicated decay with a percent of 27.53%, which means 76 cases, then the incipient cavities whit percent of 10.86%, which means 30 cases, and the rampant cavities with a percent of 5.82%, which means 16 cases. (Figure 5).

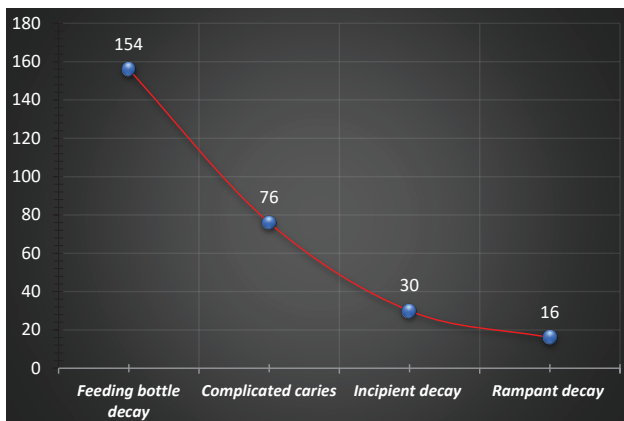


Figure 5 Distribution of the type of carious lesion

Conclusions:

Deciduous teeth cavities represent a frequent type of disease, which constitute one of the most important dental health problems in preschooler children, both because of the direct implications and the likely consequences on their permanent teeth. Even if a decrease in the incidence of dental cavities is registered in the industrialized countries of the world, when it comes to deciduous teeth, the frequency of the cavities is still high, at least for certain social groups.

The results of our study highlights the need to establish dental health education programs in both national and community level, kindergartens and schools having a great potential for influencing dental health care habits in children early years. Parents education is mandatory for a good result in children dental health.

Compliance with Ethics Requirements:

„The authors declare no conflict of interest regarding this article“

„The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national law. Informed consent was obtained from the patient included in the study“

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