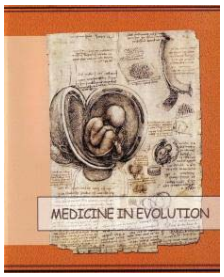
Prophylaxis of dental diseases in the first period of mixed dentition



Cuc E.A.[1], Domocoş D.[1], Cuc G.D.[2], Todor P.C.[2], Bei M.F.[3], Anchidin O.I.[4], Pogan M.D.[1]

[1]Department of Dental Medicine, Faculty of Medicine and Pharmacy, University of Oradea, Romania
[2]Student, Faculty of Medicine, University of Medicine and Pharmacy "Iuliu Haţieganu" Cluj-Napoca, Romania
[3]Department of Food Products Engineering, Faculty of Environmental Protection, University of Oradea, Romania
[4]Drd. Faculty of Medicine, University of Medicine and Pharmacy "Iuliu Haţieganu" Cluj-Napoca, Primary cardiologist, scientific research assistant Heart Institute "Niculae Stăncioiu" Cluj-Napoca, Romania

Correspondence to:
Name: Domocoş Daniela
Address: Department of Dental Medicine, Faculty of Medicine and Pharmacy, University of Oradea, Romania, December 1st Square no.10, 410068 Oradea, Bihor County, Romania
Phone: +40 747386260
E-mail address: danadd769@gmail.com

Abstract

Introduction: To reduce the morbidity caused by dental caries, it is necessary to intervene to eliminate it by acting on socio-economic, behavioural, environmental and medico-biological factors as well as on health systems.

The aim of this study was to continue to promote oral health among pupils aged 6-9 years.

Objectives-The study aimed at: - identifying the main aspects of dental morbidity specific to the first period of mixed dentition, studying the morbidity of the six-year molar due to caries.

Material and method: The study group included 1st, 2nd and 3rd grade pupils because their age corresponds to the first period of mixed dentition: 6-9 years old.

Results and discussions: Simple caries at the six-year molar are present in 35 of the cases (23.3%). The most affected are the lower molars (36 and 46) - 25 cases (16.6%), and in 10 cases (6.66%) all 4 permanent first molars are affected. One third of the subjects states that they regularly visit the dental office. Half of the children in the group go to the dentist only in case of emergency.

Keywords: molar, sealing, caries

INTRODUCTION

Dental caries is characterised by a multifactorial aetiology and, to reduce the morbidity for which it is responsible, it is necessary to intervene to eliminate it or to reduce its impact by acting on socio-economic, behavioural, environmental and medico-biological factors as well as and on health systems, knowing that the latter influence the health of the population by up to 10-15% [1,2].

Aim and objectives

The aim of this study was to continue to promote oral health among pupils aged 6-9 years through activities aimed at training and at developing correct behaviours regarding oral health as well as at increasing the level of medical knowledge among pupils.

Objectives:

- identifying the main aspects of dental morbidity specific to the first period of mixed dentition
- studying the morbidity of the six-year molar due to caries, taking into account, on the one hand, the vulnerability of this tooth to caries and, on the other hand, the importance of maintaining it on the arch;
- assessing pupils and their parents' level of knowledge on:
    - the six-year molar
    - the methods of preventing tooth decay
    - the importance of regular visits to the dental office
- monitoring attitudes and behaviours in parents regarding the addressability to the dentist for both curative and prophylactic purposes.

MATERIAL AND METHODS

The study group included 1st, 2nd and 3rd grade pupils because

- their age corresponds to the first period of mixed dentition: 6-9 years old;
- during this period, children develop attitudes, habits and behaviours related to maintaining oral health, oral hygiene and the integrity of the dento-maxillary apparatus;
- being a community, the oral health education programme is easier to implement and monitor.

In order to have the best possible representation for the city of Oradea, two schools were selected, according to the following inclusion criteria:

- schools located in different areas of the city
- schools with a large number of pupils
- children belonging to families with different levels of training, education, standard of living and social background.

Within each school, a class of pupils was selected for each level of schooling (1st, 2nd and 3rd grade - a total of six classes of pupils).

Thus, the resulting group, following the inclusion criteria presented above, consisted of 150 pupils.

The study was carried on between September and December 2019.

The working technique consisted of:

a. oral examination of the pupils included in the study

b. applying questionnaires on the study group (child - parent)

c. conducting an oral health prophylaxis and education programme

The oral examination of the pupils was conducted in the dental offices of the two schools and monitored individually, based on the dental formula:

- children's orodental state and dento-maxillary development,
- the presence or absence of dental abnormalities,
- the state of orodental hygiene.

Resources used:

- human resources: teaching staff (primary school teachers) in schools, dentists
- material resources: video format information and educational materials; educational film

Activities:

- working meetings with the Programme partners;
- information, educational, communication activities carried out with the pupils;
- distribution of promotional materials;
- quantitative/qualitative and subjective assessment activities;
- presentation of the results of the activities carried out [2].

Depending on the children's age, ability to understand and level of physical and intellectual development, the lessons were, at the beginning, informative and educational, evolving in complexity. Children developed correct skills and behaviours as well as the habit of visiting the dental office for preventive purposes and of promoting the acquired messages.

The following teaching methods were applied:

Didactic demonstration: The didactic demonstration consists in presenting several objects, phenomena or their substitutes or in performing several activities to be incorporated by the pupils in order to ensure a concrete-sensory support that shall facilitate the knowledge of certain aspects of reality or the reproduction of certain activities that are the basis of several practical components [3-5].

The didactic combined with problematization: The didactic exercise combined with problematization is a useful method thanks to its heuristic and activation potential. It consists in creating practical or theoretical difficulties where the solution should be the result of the activity performed by the pupil. This didactic method stimulates pupils to search, discover and figure out new solutions [4,5].

The formative value of this method is indisputable: it consolidates cognitive structures, stimulates the spirit of exploration, forms an active work style, cultivates autonomy and courage in presenting one's own positions.

Teaching aids are not only purely informative, facilitating the transmission of knowledge, but they are also formative, familiarizing pupils with handling, choosing and with the significance of several tools that are indispensable for describing and understanding new aspects or dimensions of reality.

Teaching aids also require thinking operations, stimulate search and research, positively influence pupils' imagination and creativity. At the same time, teaching aids raise pupils' awareness of certain problems, arousing their curiosity and motivating them further in discovering cognitive territories [2-4]

RESULTS AND DISCUSSIONS

Of the 150 children from the study group, 80 were girls and 70 were boys, aged 7-9 years.

The oral examination of the pupils in the study group showed that only 17.33% of the children (26 pupils) were free of caries - a very small percentage that raises some questions, motivates the basis of this study and explains the need to apply a prophylaxis programme for this category of population.

Being the period when temporary teeth are replaced and the six-year molar erupts, the present study places great importance on this molar showing that the six-year molar free of caries erupted on the arch in only 63 children (42%). Of these, 42 children (66.6%) presented

seals applied on all first molars, 6 children (9.52%) presented seals applied only on 2 molars while the other two molars were to be sealed during a future visit to the dental office, and the rest of 15 pupils (23.8%) presented no seals.

Simple caries at the six-year molar are present in 35 of the cases (23.3%). The most affected are the lower molars (36 and 46) - 25 cases (16.6%), and in 10 cases (6.66%) all 4 permanent first molars are affected.

51 pupils (34%) presented complicated caries of the six-year molars, the most frequently affected ones being again the lower molars 36 and 46.

Complicated caries of temporary teeth are present in 74% of the cases affecting one tooth (21 children), two teeth (41 children) and three teeth (49 children).

Being the period when temporary teeth are replaced, more than half of the pupils in the study group, that is a percentage of 51.33% (77 children), showed root debris of temporary teeth.

Treated temporary teeth in children in the group are less frequent. Only 31.3% of the children presented treated temporary teeth: 11 cases - with one filling, 9 cases - with two fillings, 19 cases - with three fillings, 8 cases - with four fillings.

According to the data in the literature [6-9] and in our study, the most affected tooth was the first permanent molar, present on the arch in 149 cases - its absence being reported only in a 7-year-old boy. Examination revealed the presence of only one six-year molar in another case (another 7-year-old boy). Impairment of this tooth was present in 86 cases, representing a percentage of 57.33% of the examined pupils.

The presence of dental anomalies and the association or not of vicious habits was present in 110 of the children examined (73.3%). Of these, 71 children (47.33%) presented vicious habits, the most common being oral respiration (42 cases), infant swallowing (23 cases), followed by thumb-sucking (6 cases).

Class II/1 malocclusion represented the most common dento-maxillary anomaly.

Addressability to the dental office in general and to the dentist in particular represented an issue formulated in several questions from the questionnaire applied to parents, but also in questions applied to the pupils.

There are no significant differences between parents' responses and pupils' responses. A fairly high percentage -10% states that (the age group studied) they have never been to the dentist.

One third of the subjects states that they regularly visit the dental office. Half of the children in the group go to the dentist only in case of emergency.

The main reason the respondents invoke in motivating this low addressability to the dentist and especially the lack of need for periodic examination results from responses such as “The child hasn't presented any problems or needed treatment / I do not think the child presents dental problems serious enough to go to the dentist” that represent 34.15% to which 0.41% non-responses to this question from the questionnaire are added.

“Unpleasant memories at the dentist and fear” are the following arguments in terms of frequency which motivate the low addressability to the dental office: 25.51% of the children's responses and 23.45% of the parents' responses.

None of the above arguments really motivates the low addressability to dental services as they are practically in contradiction with the results following the oral examination of the pupils included in the study.

However, the responses regarding the children's last visit to the dentist represent a consequence of this low addressability and reflect the state of fact mentioned above. The reasons they address the dentist more frequently are as follows:

- pain - in 34.56% of the children's responses and in 30.04% of the parents' responses;
- extractions of temporary teeth and their remains - in 28.39% of the children's responses and in 24.69% of the parents' responses;

– treatment of dental caries - in 9.46% of children's responses and in 30.86% of the parents' responses.

If the above responses showed low addressability, this is not due to accessibility to dental services. Responses such as "the dental office is too far" or "I could not afford" are very few - 2.05%, respectively 3.70%. One can notice that, theoretically, parents' attitudes are generally positive and, evaluating the addressability to the dentist only through the responses given, one can say that addressability is good, but referring to those previously detailed and to high caries morbidity, the following aspect can be suggested: - although parents know what the correct attitude and the necessary behaviour are, in practice, the vast majority of them do not proceed properly, taking the child to the dentist only in case of emergency.

The family is responsible for the child's sanogenic lifestyle because the family is the first source of information on oral health. One way to increase the child's interest in oral health is to provide constantly updated information, parents' education and permanent motivation. School also plays an important role in forming sanogenic habits because of the considerable amount of time children spend here [10,11].

The results of the present study show that adults' sanogenic habits and level of knowledge are important factors in children's sanogenic education. Family status with both parents shows lower values of caries indices in children compared to those coming from single-parent families. Mothers' level of knowledge in oral health is proportional to their level of education. The higher the mothers' level of knowledge in oral health, the higher the children's level of knowledge. There is a dramatic proportion of mothers who have no information and no knowledge on oral health [12,13].

CONCLUSIONS

1. The oral examination of the pupils in the study group showed that 42% of the children have permanent molars free of caries;

2. Complicated caries to temporary teeth are present in 74% of the cases;

3. Treated temporary teeth are found in 31.3% of the children in the group;

4. The presence of dental anomalies and the association or not of vicious habits was found in 73.3% of the examined children;

5. The oral prophylaxis programme for school children, parents and teaching stuff has raised the awareness of the importance of oro-dental hygiene, food factor, periodic visits to the dental office. Eventually, the programme has led to the conclusion that primary prevention in dentistry plays the main role in oral health education.

6. The family is responsible for the child's sanogenic lifestyle because the family is the first source of information on oral health. School also plays an important role in forming sanogenic habits because of the considerable amount of time children spend here.

7. Adults' sanogenic habits and level of knowledge are important factors in the children's sanogenic education.

8. The oral health education programme carried out in schools has led to the increase of tooth brushing to twice a day for both children and parents.

Although the average value of the caries index increased, from one assessment to another, one could note an increase in the level of knowledge as well as changes in school children's behaviours and attitudes.

REFERENCES

1. Managementul Proiectelor de Sănătate; Scrierea de Proiecte, Identificarea de Finanţări şi Gestionarea Financiară, A.R.S.P.M.S. Şi Catedra de Sănătate Publică Şi Management Sanitar, UMF Carol Davila. Bucureşti; 1999.

2. Cuc A, Todor L, Iftode A, Dima R, Matei RI, Domocoş D, Ciavoi G. The importance of teaching oral health to children from kindergarten. Medicine in Evolution. 2018; XXIV(2):147-152.
3. Usdhhs, Healthy People; 2000.
4. Alma-Ata, Asistenţa Primară A Stării De Sănătate Oms–Unicef; 1987.
5. The State Of The Worlds Children; 1995.
6. Warren JJ, Slayton RL, Yonezu T, Kanellis MJ, Levy SM. Interdental spacing and caries in the primary dentition. Pediatr dent. 2003; 25:109-113.
7. Padma Kumari B, Retnakumari N. Loss of space and changes in the dental arch after premature loss of the lower primary molar: a longitudinal study; Journal of Indian Soc of Pedodontics and Preventive Dentistry. 2006;24(2):90-96.
8. Bonchiş E. Copilul Şi Copilăria-O Abordare Psiho-Pedagocică. Editura Imprimeriei De Vest Oradea; 1998.
9. Bica A, Podariu AC, Krems CD, Podariu AS, Popovici RA. Tooth Brushing Behavior in 6-11 Year Olds Children and the Importance of a Break of Tooth Brush Once a Day in School. Revista de Cercetare si Interventie Sociala. 2016;54:115-124.
10. Podariu AS, Podariu AC, Popovici RA. Communication Strategy on Oral Health Education for Adolescents. Revista de Cercetare si Interventie Sociala. 2017;58:68-80.
11. Malvitz D M. Education for Oral Health-From Striffler D.F; D.D.S.M.R.H., Dentistry Dental Practice and The Community. W.B. Saunders-Compagny; 1983.
12. Popovici RA, Podariu AC, Anculia RC, Serafin AC, Tigmeanu CV, Krems CD, Levai MC. Accessibility to Dental Health Care: Risk Factor in Oral Health at Rural Area Community. Revista de Cercetare si Interventie Sociala. 2017;59:48-61.
13. Roşan CA, Popovici R. Norms and demands of hygiene in the intra-community area. Analele Universităţii din Oradea, Fascicula: Ecotoxicologie, Zootehnie si Tehnologii de Industrie Alimentară. 2018;XVII/B:173-176.