THE PERSONAL HYGIENE ROLE IN THE OCCURRENCE OF THE DENTAL CARIES

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Keywords: *dental caries, risk factors, individual personal hygiene*

Abstract: *The purpose of this study was to check the effectiveness of control measures of risk factors involved in the production of dental caries. This has been studied for 24 months on a total of 207 students at the same school, aged 16-18 years. The control group comprised 110 students granted the requested dental care throughout the study. The experimental group comprised 97 students, who were given oral hygiene index OHI-S after the subjects we assessed the risk of tooth decay and Cariogram method I demonstrated on a model dental teaching method Bass. Dental health status was recorded in individual files prophylaxis. Oral hygiene status was good for 42%, 19% satisfactory and unsatisfactory for 39% of patients. In the caries risk 70% of patients were in increased risk category, 22% were medium risk and only 8% had a low risk. After 24 months, patients were examined again and based on the results obtained were compared by χ^2 method. Conclusions: Simple measures to show the card and the system are interactive. Cariogram means education that can significantly impact short-term, oral-dental health.*

Cuvinte cheie: *caria dentară, factori de risc, igienă personală individuală*

Rezumat: *Scopul acestei cercetări a fost verificarea eficienței unor măsuri de control a unor factori de risc implicați în producerea cariei dentare. Material şi metodă: în acest scop au fost luați în studiu timp de 24 luni un număr de 207 elevi de la aceeaşi şcoală, cu vârste cuprinse între 16-18 ani. Lotul martor a cuprins un număr de 110 elevi, cărora li s-a acordat asistență stomatologică la solicitare pe toată perioada studiului. Lotul experimental a cuprins un număr de 97 elevi, cărora li s-a determinat indicele de igienă orală OHI-S după care subiecților le-am apreciat riscul la carie prin metoda Cariogram şi le-am demonstrat pe un model didactic periajul dentar prin metoda Bass. Starea sănătății dentare a fost consemnată în fişele individuale de profilaxie. Rezultate: starea igienei orale a fost bună pentru 42%, satisfăcătoare pentru 19% şi nesatisfăcătoare pentru 39% din pacienți. În privința riscului la carie 70% din pacienți s-au aflat în categoria riscului crescut, 22% au avut risc mediu şi doar 8% au avut un risc scăzut. După 24 de luni, pacienții au fost examinați din nou iar pe baza datelor obținute s-au comparat rezultatele prin metoda χ^2. Concluzii: măsurile simple de evidențiere a plăcii şi sistemul interactiv Cariogram constituie mijloace de educație care pot influența semnificativ, pe termen scurt, starea de sănătate oro-dentară.*

INTRODUCTION

Since 1970 the prevalence and intensity of decay in Europe recorded a marked decrease. Despite this both in industrialized states of Western Europe and especially in Eastern European countries, remains an important segment of young population in this pathology with a particular frequency (1,2). Intensity decay in Romania experienced a less marked decrease continued to reach values 2-3 times higher than in industrialized countries: Sweden, Finland, Denmark, Switzerland, United Kingdom, Germany, etc. (2).

Dental caries are considered today an infectious disease transmissible with multi-factorial etiology and progressive. They interact to produce the following factors: plaque composed of bacteria, the host represented by the quantity and quality of saliva, tooth structure and morphology, carbohydrate-rich diet containing fermentable and time factor related to the period of exposure to acids produced by dental plaque.

To prevent or stop the production of lesions is not sufficient to eliminate one type of etiologic factors or only to increase the resistance of dental hard tissues. In addition to these factors we should consider some genetic, etiological factors outside individual food behavior, since evolution is part of carious lesions in a balance that involves the interaction of many risk factors (Figure 1).

Caries risk diagnosis must be made since the first consultation by the general state history, an interview related to external factors, clinical examination, radiological tests and possibly salivary complementary biophysical and microbiological (7.8).

THE AIM OF THE STUDY

The purpose of this study was to check the effectiveness of control measures of risk factors involved in the production of dental caries.

MATERIAL AND METHOD

We studied a total of 207 pupils aged 16-18 years studying in a school with an industrial profile of the city of Sibiu. They were examined by one examiner in the dental chair by way of visual-tactile (touch probe with limits recommended by WHO).

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In literature there are many published studies about the role of risk factors in determining dental caries (3, 4, 5, 6). In our research we found that the method proposed by the American Academy of Pediatric Dentistry assessing the factors that determine the caries risk respond best to a regular dentist. It requires that factors may be grouped as a simple table to allow classification in three categories (Table 1).

Figure no. 1. Caries balance and factors that influence

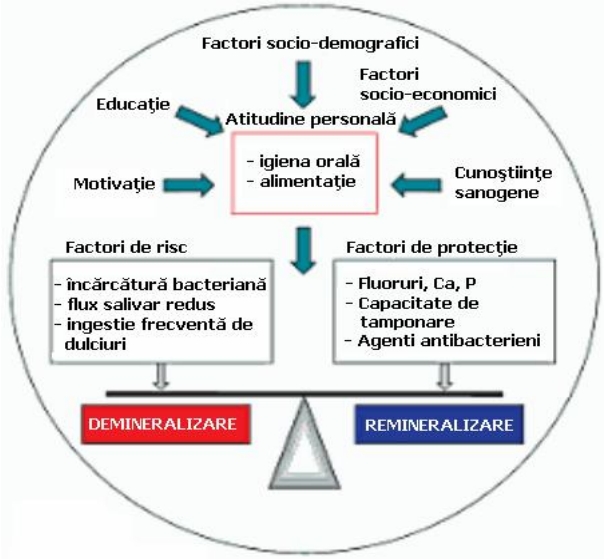


Table no. 1. Method of classification in risk categories proposed by AAPD cavity (3)

NEW PACIENTS		
Age category	**Children**	**Teenagers / adults**
Low risk	No caries, filled or missing surfaces dmf-s = 0	No caries, filled or missing surfaces DMF-S = 0
Medium risk	Previous caries experience dmf-s > 0 and/or 1 active lesion	Previous caries experience DMF-S > 0 and/or 1 active lesion
High risk	Previous caries experience dmf-s > 0 and/or 2 active caries or 1 lesion on a smooth face	Previous caries experience DMF-S > 0 and/or 2 active caries or 1 lesion on a smooth face

The criteria referred patients examined were classified in risk categories to caries in Table 2.

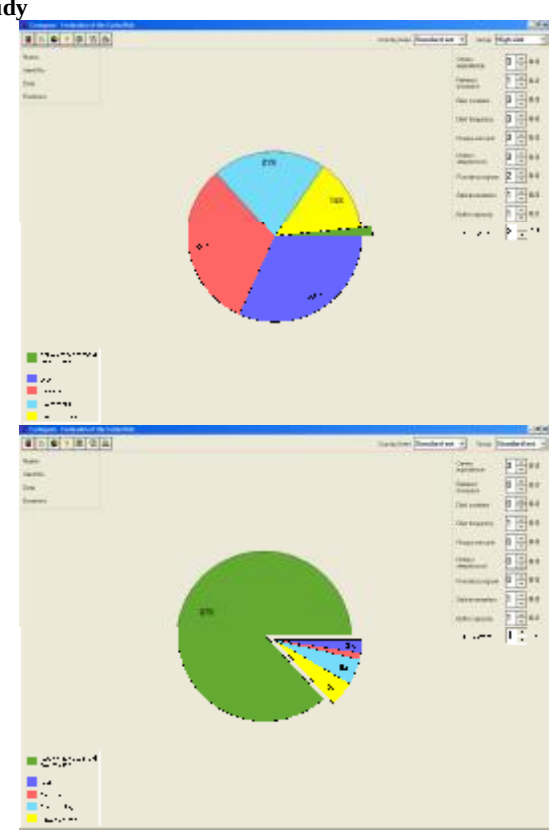
Table no. 2 - Distribution of caries risk in the groups according to the evaluation criteria adopted

	Total	**Low risk**	**Percent (%)**	**Medium risk**	**Percent (%)**	**High risk**	**Percent (%)**
Control group	110	9	8	18	16	83	76
Experimental group	97	8	8	28	29	61	63
Total	207	17	8	46	22	144	70

They were examined clinically in the dental office with dental mirror and probe; the teeth were dried with air stream saliva of units. The data were recorded in individual files on which we mentioned the prophylaxis intensity indices: the percentage of decayed teeth, DMF-T DMF-S at the beginning and at the end of the experiment. The control group received dental care only on request.

The experimental group we applied the following procedures, which were: to determine oral hygiene index OHI-S by staining with solution 2% eosine Ramfjord teeth (11,16,26 and 31per faces 36 and 46 vestibular and lingual sides) training for dental Bass method on a model emphasizing teaching and dental caries risk using interactive computer program proposed by Brathall Cariogram (9.10). With this program we assessed the risk of each subject in the experimental group to prevent injuries in November at the beginning and at the end of the study as shown in Figure 2.

Figure no. 2. Patients A.M.B. cariogram from the experimental group at the beginning and at the end of the study



RESULTS AND DISCUSSION

After an interval of 24 months groups were examined again and the data were recorded in individual files on which prophylaxis was formed following tables 3 and 4 recording medical data of the two groups at the start and at the end of study.

To confirm the significance of the results we analyzed statistically using the epidemiological software Epi - WHO Info Geneva 1995. I have undergone statistical comparison on the number of teeth / decayed surfaces in the experimental group compared to the control group at the beginning and at the end of the study.

Qualitative characteristics being alternative type χ^2 test, the statistical significance that we applied is uncertain when the indicator is calculated at larger scales than $\chi^2 > p$ tabulated, statistically significant differences that we have the $\chi^2 < p$ spreadsheet.

Table no. 3. Medical data of the control group at the beginning and at the end of the study

Control group	Examined teeth	Decayed teeth	Missing teeth	Filled teeth	DMF-T medium	Examined surfaces	Decayed surfaces	Missing surfaces	Filled surfaces	DMF-S medium
Begin	3024	307	42	231	5,27	13870	498	210	333	9,46
End	2993	375	73	291	6,97	13726	588	354	396	12,62

Table no. 4. Medical data of the experimental group at the beginning and at the end of the study

Experi-mental Group	Examined teeth	Decayed teeth	Missing teeth	Filled teeth	DMF-T medium	Examined surfaces	Decayed surfaces	Missing surfaces	Filled surfaces	DMF-S medium
Begin	2656	240	60	165	4,79	12117	372	299	230	9,28
End	2649	252	67	182	5,16	12082	389	334	252	10,05

Table no. 5. Results of statistical comparison of the patient medical data from the experimental group

Experimental group	Before the experiment			After the experiment		
	χ^2	*p*	Signification	χ^2	*p*	Signification
Decayed teeth	2,02	0,15	s	16,47	0,00005	s
Decayed surfaces	484,88	0,00001	s	428,15	0,00001	s
Missing teeth	6,10	0,01	s	0,0005	0,099	ns
Missing surfaces	30,62	0,00001	s	0,85	0,35	s
Filled teeth	4,44	0,035	s	18,07	0,00002	s
Filled surfaces	7,71	0,005	s	16,77	0,00004	s

We submitted the number of decayed tooth statistical comparison, decayed surfaces in the experimental group compared to the control group before and after the experiment. After statistical comparison of results obtained in the two groups, we have formed a separate table showing the effect on dental health achieved only by improving personal hygiene measures oral-dental on the examined subjects, the data are presented in Table 5.

In the classification of subjects at risk of decay the value we obtained for low and medium risk is about 31% and is nearly two times lower than the value reported in studies conducted in Western industrialized countries (9, 10, 11).

Hygiene-dietary measures adopted by patients in experimental group caused an increase in χ^2 from 2.02 at baseline to 16.47 at the end of the study, increasing the difference with p spreadsheet which leads to conclusion that there was a lower increase number of decayed teeth in the experimental group compared to control group after changes produced by the annihilation risk factor for plaque.

Similarly calculated χ^2 block teeth increased from 4.44 at baseline to 18.07 at the end of the study leading to the interpretation that this increase is due to the increased motivation for Oral Health - Dental.

For missing teeth, we obtained significant results partly explained by reduced time how long the experiment and / or low number of subjects being investigated. In other words we can say that the reduction of the intensity decay in the group that received the test plate and educational measures have resulted in increased motivation for personal dental hygiene. This led to short-term control of risk factors incriminated in the caries pathology disease leading to decreased number of decayed teeth in the experimental group of around 2.34% compared to the control group.

CONCLUSIONS

Enhancing motivation for Oral Health - dental and oral hygiene improvement are key factors that can lead to reduced risk to dental caries.

Computer program for assessing the overall risk to caries is a useful tool that allows shortening the risk assessment team facilitating doctor-patient work. It contributes to a better understanding of risk factors to be annihilated to prevent further damage.

Knowledge of factors influencing production of dental caries and plaque control by staining determined to produce a motivation to improve dental care are the individual dental care measures.

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