

ORAL HEALTH PROFILE, KNOWLEDGE AND BEHAVIOUR IN A GROUP OF PRESCHOOLERS – A PILOT STUDY

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Abstract

In the field of community dentistry, when talking about, it is aimed at translating attitudinal change into behavior, the ultimate goal being to change unhealthy habits, especially at early stages of life. The objective of the study is to assess the oral health status, the knowledge and behavior among a group of 73 preschool children from Bucharest. A questionnaire recommended by WHO was administered, an oral health education lesson was presented and a clinical examination was performed. The results are presented comparatively, before and after the oral health education lesson. After the education lesson, certain messages were understood and retained by the preschoolers, namely: the frequency of brushing, the fluoride content of the toothpaste, the fact that sticks and pastries that are not healthy for teeth. Regarding the consumption of sweets, 80% of the children (compared to 60% initially, $p < 0.05$) choose to reduce consumption as a prevention method. Conclusions: results demonstrate an unhealthy dental visits behavior and a relatively low level of knowledge regarding dental prevention. The values of the primary caries indices are increased, the presence of non cavitated lesions and the lack of sealants are also noted, which demands increased preventive and curative dental treatment needs. There is a need to implement preventive and oral health promotion programs in preschool children communities.

Keywords: oral health education, preschoolchildren, knowledge, behaviour

Introduction

The first years of life are essential for the development of the child and then for the health of the adult for a long period. The health education of the child must be carried out from the earliest age, and its beneficial effect on the state of health can last a lifetime [1]. Most oral health promotion programs have the main target group the children in kindergartens and schools [2,3]. The existence of consistent relationships between the caries risk and the level of oral hygiene measured by plaque indices, personal tooth brushing and the use of fluoridated toothpaste, has been

demonstrated [4]. In the field of oral health, when talking about attitudinal change, it is also aimed at translating it into behavior, the ultimate goal being to change unhealthy habits and to reduce the exposure to the risk factors [2,5]. In childhood, the receptivity is high, the children having the desire, but also the ability to learn new things. Moreover, World Health Organization (WHO) believes that promoting health in the environment in which individuals live, work or play is the most effective way of changing attitudes and behaviors, which is why the study was conducted among preschoolers during the activity of the daily kindergarten program [6-8]. Encouraging a favorable attitude towards visiting the dentist for regular consultation will help the child overcome their fear and prevent subsequent anxiety in adult life, and the information received in childhood will be the basis on which the behavior will be formed in adult life [9,10].

Material and methods

The study included 73 preschoolers from three kindergartens in Bucharest, with a mean age of 5.42 years ($SD=0.08$), 43.9% girls ($N = 32$).

In order to obtain information on preschoolers' knowledge and behavior towards oral health, a questionnaire recommended by WHO was administered, with closed questions and one opened question. Data were obtained regarding: oral personal hygiene habits of the child; cario-protective methods; frequency and the content of daily diet; reason and frequency of visits to the dentist; main sources of information on oral health; demographic information.

A health education lesson was realized by presenting an animated film "Journey into the Kingdom of the Tooth" (Dr. Rabbit and the Legend of the Tooth Kingdom) after obtaining the consent for using it on educational purposes. Also, it was used the demonstration of tooth brushing technique on models. After the oral health education lesson, the same questionnaire was administered again, after 2-4 weeks.

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Results

A. Regarding the oral health profile, the caries index values for the 73 preschoolers are:

- dmft = 3.9 (DS=0.51): d = 3.3 ((DS=0.50); m = 0.1 ((DS=0.06); f = 0.5 (DS=0.14)
- dmfs = 7.7(DS=1.27): ds = 6.8 ((DS=1.29); ms = 0; fs = 0.9 (DS=0.25).
- DMFT and DMFS = 0
- for 7 subjects (9.6%) were recorded non-cavited lesions of which 5 for male children.
- sealants were noted only in two preschool children (50% females), for permanent first molars.

B. In terms of oral hygiene, codes 0 (41.1%; N=30), 1 (39.7%; N=29) and 2 (19.2%; N=14), were registered. By gender, in equal proportion, 16 boys were assessed with code 0 and 1 and 5 girls with code 2, compared to 9 male subjects.

C. Oral health knowledge of the preschoolers. The results are presented comparatively, before and after the oral health education lesson.

- The level of knowledge about the frequency of personal dental brushing shows that half of the subjects give the right answer, but about 20% choose the once a day option and even rarer. Most of the subjects know that it is advisable to use toothpaste and toothbrush and few choose dental floss (less than 20%). After the education lesson,

more children know that it is correct to brush twice, in the morning and in the evening (Table 1).

- Children's knowledge regarding of the toothpaste components that play a role in tooth decay prevention are moderates initially, but after education lesson more subjects know the cariopreventive role of Fluoride (Table 2).

- Knowledge about cariogenic food are presented in Table 3. The majority (91.8%) correctly answered regarding the harmfulness of sweets as well as of carbonated juices.

- Methods of prevention in the opinion of children are showed in Table 4. The method of prevention in the opinion of the children remains in a large percentage the tooth brushing, but also the consumption of sweets and control are considered preventive even if in some smaller percentages.

D. Oral health behavior of the preschoolchildren. Regarding the frequency and the reasons for dental visits, the results are showed in Table 5. Almost half have never been to the dentist office and a quarter have been in pain or in emergency.

E. Sources of information related to oral health are presented in Table 6. For most children, parents or grandparents had an influence on caring for their teeth, the dentist is involved in one third of the cases. In a quarter of situations, the educational programs are also mentioned.

Table 1. Knowledge of subjects regarding the frequency and means for tooth brushing.

	Baseline		Final	
	N	%	N	%
Frequency				
After every meal	15	20.6	15	20.6
Twice a day	38	53.4	42	57.5
Once a day	15	20.6	13	17.8
At two days	2	2.7	2	2.7
Rarely	3	4.1	1	1.4
Means				
Tooth brush	72	98.6	72	98.6
Tooth paste	68	93.2	68	93.2
Dental floss	12	16.4	21	28.7

Table 2. Children's knowledge of toothpaste composition.

	Baseline		Final	
	N	%	N	%
Cariopreventive components				
I don't know	65	89.0	47	64.3
Calcium	1	1.36	1	1.36
Caramel	1	1.36	0	0
Fluor	2	2.73	24	32.87
Menthol	3	4.10	0	0
Vitamins	1	1.36	1	1.36

Table 3. Knowledge of healthy/unhealthy food for the teeth.

	Baseline		Final	
	N	%	N	%
Vegetables	8	11	4	5.5
Cereals	14	19.2	13	17.8
Cheese products	10	13.7	9	12.3
Fruits	7	9.6	6	8.2
Sweets	67	91.8	67	91.8
Sticks pastries* ($p<0.05$)	22	30.1	35	48
Beverages	49	67.1	52	71.2

Table 4. Children's opinion on the main cariopreventive methods.

	Baseline		Final	
	N	%	N	%
Tooth brushing	69	94.5	69	94.5
Eating less sweets* ($p<0.05$)	44	60.3	59	80.8
Dental check-ups	35	48	38	52

Table 5. Preschoolers' behavior regarding addressability to the dentist.

	Baseline		Final	
	N	%	N	%
Frequency of dental visits				
Never	30	41.1	29	39.7
Once	12	17.8	14	19.2
Several times	31	42.5	31	42.5
Reasons for dental visits				
Emergency/pain	19	26	18	24.7
Primary tooth extraction	17	23.3	19	26
Orthodontic treatment	0	0	1	1.4
Preventive care	3	4.1	4	5.5
Check-ups	15	20.6	14	19.2
I don't know	12	16.5	13	17.8

Table 6. Sources of information on oral health.

	Baseline		Final	
	N	%	N	%
Family (parents, grandparents)	63	86.3	62	84.9
Kindergarden teacher	10	13.7	9	12.3
Dentist	20	27.4	16	21.9
Educational programs	15	20.6	19	26
TV, mass media	7	9.6	9	12.3

Discussions

The statistically significant differences between the initial and final responses were assessed by applying the McNemar statistical test (which measures the difference

between the proportions of two variables, before and after the education lesson) and are highlighted in the tables with an asterisk. Statistical significance threshold was considered $p < 0.05$.

Thus, although there are several answers to which the children chose in a higher percentage the correct answer after being exposed to the education lesson, only in a few situations the differences were statistically significant, namely:

- regarding the consumption of sweets, the children finally chose to reduce the consumption as a method of taking care of the teeth, although it is noteworthy that the preschoolers initially knew that sugary foods are not healthy for the teeth;
- preschoolers understand that pastry products are not healthy for the teeth.

After the education lesson, certain messages were understood by the preschoolers, namely: the frequency of brushing (the proportion of those who responded once a day or less decreased; as in the 2009 study published in 2012; the use of dental floss was mentioned initially by 16% of the children, then the percentage increased to 29%; the same situation regarding the fluoride content of the toothpaste [5]. In terms of cariogenic foods, a statistically significant number of children (48% versus 30%) retained the fact that sticks and pastries that are not healthy for teeth. Regarding the consumption of sweets, 80% of the children (compared to 60% initially, $p < 0.05$) choose to reduce consumption as a prevention method.

Conclusions

The results of the study demonstrate an unhealthy dental visits behavior and a relatively low level of knowledge regarding oral health and dental prevention. As for oral status, only 33% of preschoolers are caries-free, and the value of the primary caries index is increased on untreated dental caries. The presence of non cavited lesions and the lack of sealants are also noted, which demands increased preventive treatment needs. We found it useful to use the animated film, an audiovisual method adapted to the preschooler's age, with a strong impact, which could determine the change of knowledge and behavior, rather than the oral transmission of oral health information. The study results are encouraging, showing that sanogene messages can be understood and retained by preschool children using audiovisual methods, but the message must be repeated, which would still be desirable. The oral health status of the preschoolers indicates the need to implement preventive programs along with education lessons.

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