

Dental decay in 6 and 12-year old children of Constanta country -epidemiological survey-

Corneliu Amariei, Luiza Ungureanu, Albertin Leon, Doina Balaban
Constanta, Romania

Summary

In Constanta County, the prevalence of oro-dental diseases is greater than in other country counties, which implies the implementation of certain prophylactic measures.

The National Program for dental caries prophylaxis (PN22) has been launched in 2001. In this program 20,000 children between 6 and 12 years old are comprised, who benefit weekly from oral rinsing with the Romanian-made fluoridated solution, *Fluorostom*. The prophylactic undertaking is effected by members of the teaching staff of the Faculty of Dentistry of Constanta and dentistry students. As no prophylactic program may be put into force without a thorough knowledge concerning the current health condition, an epidemiological survey has been conducted in October 2001 in order to determine the dental decay pathology in representative batches, comprising 1,305 children.

The aggregate number of 6-year old children was 622 and of 12-year old - 638 children, from all the cities and some villages of Constanta county. The assessment of dental health of the children was made by means of the value of DMF-T and DMF-S indices. Their high values (DMF-T in 6-year old children was 5.12 in Constanta county, 5.15 in Constanta city, 5.22 in the urban areas of the county and 4.99 in the rural zones of the county; in 12-year old children, DMF-T was 4.47 in Constanta county, 4.5 in Constanta city, 4.82 in the urban areas of the county and 4.07 in the rural areas) imposed the development of a long-term prophylactic program.

Introduction

The morbidity dynamics of dental decay, pointed out through epidemiological surveys of Romanian people in the last 10 years shows that the highest specific indices are in Dobrogea.

The Health and Family Ministry agreed in 1997 an Oro-dental Diseases Prophylactic Program (National Program no.22), validated by Romanian Parliament (Order no. 536/3.08.2001), which envisages the prevention of dental decay in schoolchildren, grades 1-4:

- by oral rinsing with fluoridated solutions;
- by simultaneous application of specific methods regarding the promotion of oral health education, in view of adopting a health oriented attitude;

- by sustaining the activities of primary, secondary and tertiary dental prevention in dental university clinics.

Although PN 22 was proposed and approved in 1998, and its development began in 2000 in 3 counties, Constanta County obtained the financing of the program only in late 2001.

20,000 schoolchildren between 6 and 12 years of age of Constanta city and other county towns are currently comprised in this program. The prophylactic method chosen for dental decay prevention was oral rinsing with the Romanian-made fluoridated solution, *Fluorostom* (sodium fluoride 0.275 g %).

Oral rinses take place weekly in schools, under supervision of members of the teaching staff of the Faculty of Dentistry (Clinic

of Pediatric Dentistry, Orthodontics and Oral Health and Clinic of Odontology), together with dentistry students from the 3rd to 6th years, excepting vacation periods.

As no prophylactic program may be put into force without a thorough knowledge concerning the current health condition, and having in view the financial situation, quite important, the need of getting acquainted with the status of dental health of 6 and 12 year-old children was felt to be a prerequisite, prior to enforcing the prophylactic program and in order to secure a point of reference as against subsequent developments.

Objective of survey

The objective was the assessment of dental health of 6 and 12-year old children of Constanta county in October 2001, by means of the value of DMF-T and DMF-S indices. These indices were calculated:

- separately for Constanta city, urban areas of the county, rural areas of the county (villages), total for Constanta county;
- separately for males and females.

Material and methods

1. The identification of study batches regarding dental decay was made having in view the aggregated number of 6 and 12-year old children, figures taken from the County Education Board.
2. The instructing of teams was made, regarding the:
 - ways of dental examination;
 - way of diagnosing - usage of symbols;
 - uniform filling of written records, respecting WHO methodology.
3. Teams were assembled, each made up by two faculty members, one for dental inspection and one for recording the symbols.

4. The program of visits in the territory was set as to examine:

- schools and kindergartens from all Constanta city districts (a number of 10);
- schools and kindergartens of Constanta county - urban areas: cities (Mangalia, Medgidia) and towns (Eforie, Techirghiol, Ovidiu, Negru Voda, Cernavoda, Harsova, Basarabi, Navodari);
- schools and kindergartens of Constanta county - rural areas: villages (Pestera, Castelu, Albesti, Pecineaga, Amzacea, Cogealac, Ghindaresti, Corbu, Faclia, Pantelimon, Horia). This program envisaged the whole geographical area of the county.

The following stage was the processing of gathered data, using EPI INFO program.

Results and discussions

The values of oral health indices in 6 and 12-year old children of Constanta county showed a deterioration of dental health, during the transition period (previously, reported oral health of the population was better, but there are serious doubts regarding the correctness of the figures).

Our survey showed the following values of DMF-T index in 6-year old children (5.12 in Constanta county, 5.15 in Constanta city, 5.22 in the urban areas of the county and 4.99 in the rural zones of the county) and the values for DMF-S index were 9.77 in Constanta county, 9.01 in Constanta city, 10.35 in the urban areas, excepting Constanta city, and 9.96 in the rural areas of the county.

The values of DMF-T index in 12-year old children were: 4.47 in Constanta county, 4.5 in Constanta city, 4.82 in the urban areas of the county and 4.07 in the rural areas and the values of DMF-S index were: 7.03 in Constanta county, 7.55 in Constanta city, 7.35 in the urban areas of the count}', excepting Constanta city, and 6.19 in the rural areas of the county.

OHDMBSC - 2002 - 1

Table 1. Number of persons with dental examinations - 6 and 12-year old children - Constanta county, October 2001

Examined persons	Constanța city			Urban areas of the county, excepting Constanța city			Rural areas of the county			Total		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
6-year old children	96	109	205	105	111	216	102	99	201	303	319	622
12-year old children	109	144	253	113	107	220	113	97	210	335	348	683
Total	458			436			411			1305		

Figures no. 1, 2, 3, 4 show the values of DMF-T and DMF-S indices in 6 year old children

Figure 1.

Figure 2.

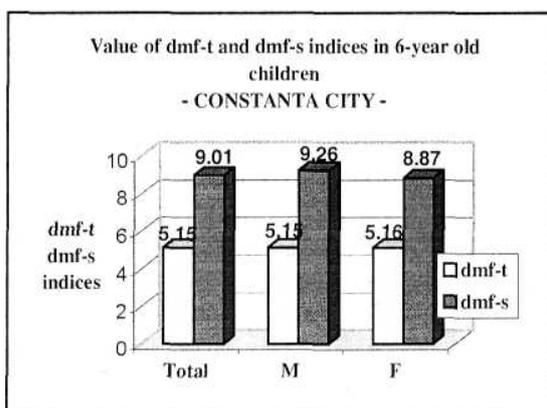


Figure 3.

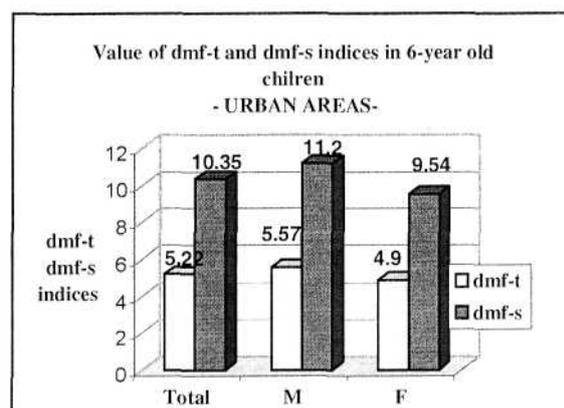
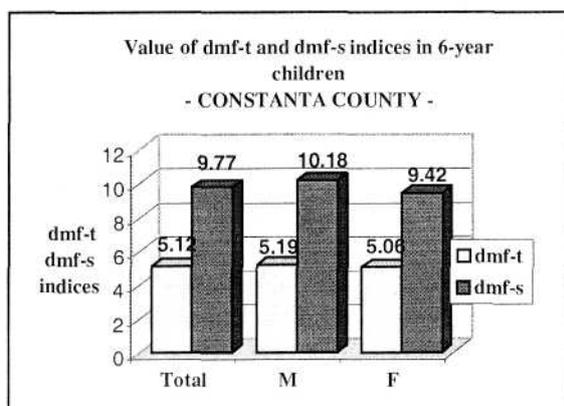
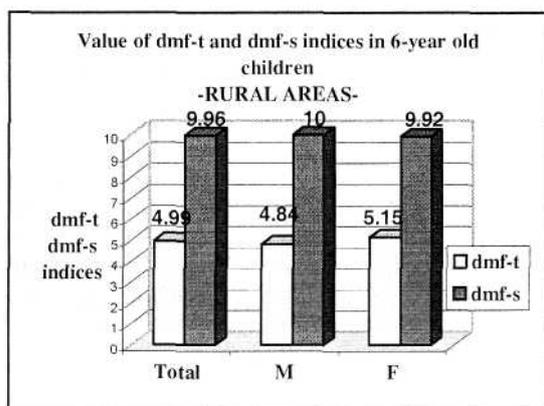


Figure 4.



Figures no. 5, 6, 7, 8 show the values of DMF-T and DMF-S indices in 12-year old children

Figure 5.

Figure 6.

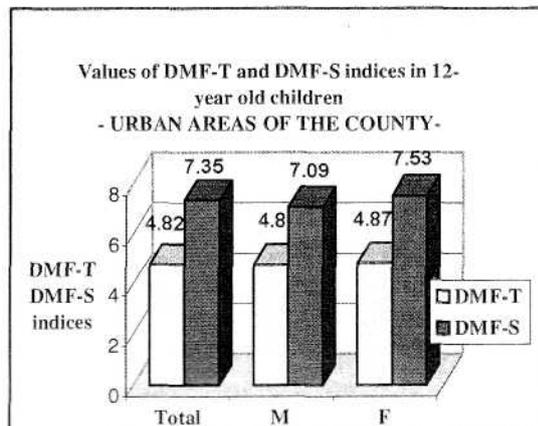
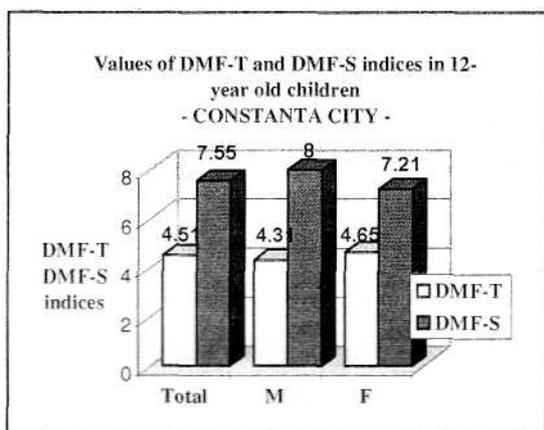
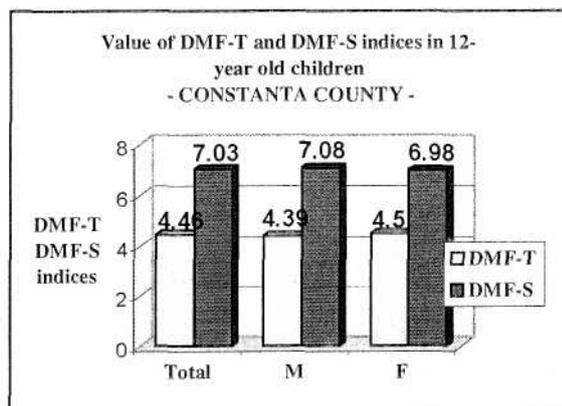
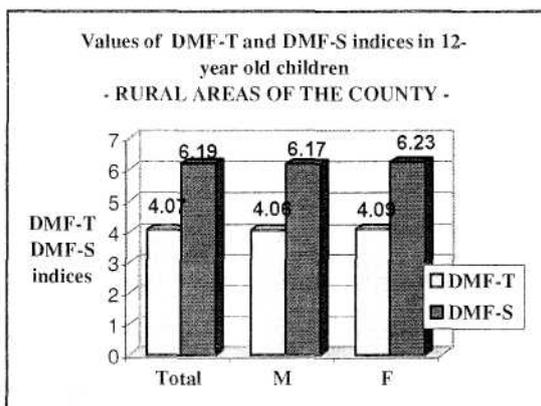


Figure 7.

Figure 8.



The lower values of DMF-T index in the rural areas are accounted for by the presence of increased fluoride values in the drinking waters of several villages, situation found out due to the fluoride county map. Other matters are the consuming of fresh/less polluted produce and the low consumption of sweets and industrially processed beverages.

The disparity between the city of Constanta and the other towns in the county (lower index values for Constanta city) may evince a higher accessibility to dental medical facilities and a greater number of dental surgeries in Constanta city, compared to the lower living standards in the other county towns. The number of teeth affected per person (DMF-T) is higher in females, but the degree of dental surfaces affected (DMF-S) is higher in males, so dental

health status is equally affected in both sexes, having values much higher than the national average (4.2) or international average (under 3).

Conclusions

1. Our survey showed a worrisome situation concerning children's dental health, which confirms official data and also previous published research, situating Dobrogea on the first place in the country, regarding dental decay pathology.
2. Dental decay affects children of 6 and 12 years of age more intensely in small county towns and less in rural areas.

3. The mentioned situation imposes the continuing of dental decay preventing program in the towns of Constanta County.
4. The high values of fluoride concentration in fountain drinking water of certain villages suggests the possibility of appearance of dental fluorosis, matter under study.

Correspondence to: Prof. Dr. Corneliu Amariei, Dean of the Faculty of Dentistry of Constanta; Clinic of Pediatric Dentistry, Orthodontics and Oral Health, Ilarie Voronca no.7, 8700 Constanta, Romania, tel/fax: 0040-241-54 56 97, e-mail: amariei@stomato-univ.ro