

The Prevalence of Dental Caries in Children in Sarajevo

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Summary

Our study was conducted in 1999 and investigated tooth decay in two groups of children aged from 5 to 7 years and 12 to 15 years in Sarajevo. DMFT/dmft in these two groups was 7.53 % in pre-school children, and 7.18 % in middle school children. The prevalence of dental caries in pre-school children was 89%, and in middle school children 96.98% (mean value: 92.9%). The results were compared with data for the prewar period in Bosnia and Herzegovina when the prevalence of the caries was 90% (1). Comparison with data for European countries was relative because of the low fluoride concentration in drinking water (0.060 ppm) and because of changes in living conditions during the war. The objective of our research was to evaluate DMFT/dmft in children who had spent the period 1992-1996 in Sarajevo. The aim of this study was to evaluate dental health, on the basis of which dental care can be defined.

Key words: prevalence of dental caries, pre-school children, middle school children.

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Introduction

In 1992, epidemiology evaluation of dental health in European countries was based on DMFT/dmft and necessary treatment in groups of children aged 5 and 12 years, according to WHO recommendations (2). Our sample included 200 children aged 5-7 years from kindergartens and 200 children aged 12-15 years from middle schools, who had spent the war in Sarajevo. The siege of the city brought about changed living conditions with poor quality, unvaried food, lack of oral hygiene preparations and absence of motivation with the presence of stress. In addition, it is important to

mention the impossibility of providing adequate dental care because of problems with the water, gas and electricity supply. In the city of Sarajevo great migration of citizens occurred; almost 1/3 of the local population left the city and many from the rural population moved in. Insufficient number of dental health care workers, inadequate equipment and material possibilities made the provision of dental care difficult. For example, 333 dentists (44 pediatric dentists) worked in the Sarajevo region in 1990, while in 1997 the total number of dentists was 177 (14 pediatric dentists) according to data from the Federal Institute for Public Health, 1998.

Material and methods

The sample in this study consisted of 400 children of pre-school and middle school age. Dental examination was conducted in daylight with a dental/oral mirror and explorer. The examination was conducted by a pediatric dentist, using standardized criteria. All tooth surfaces were examined. Caries with a cavity or visually discolored enamel, in the early stage of demineralization was registered. All carious, missing and restored teeth were recorded in the patient's dental chart. Statistical analysis was done according to the indexes recommended by FDI (3).

Results

Results of our research showed that dmft in children aged 5-7 years was extremely high (7.53). Especially disastrous was the fact that out of the total DMFT, carious teeth took a share of 90.7%, and filled teeth only 1.85%. The results showed that only 11% of pre-school children had totally intact teeth, i.e. the prevalence of caries in this group was 89%. DMFT in middle school children was also high (7.18%). When we compared middle school children to pre-school children, the ratio of carious teeth to filled teeth was more favorable in middle school children (43.7% - carious teeth: 43.17% - filled teeth). The prevalence of caries in this group of children was extremely high - 96.98%, which meant that out of 200 children examined only six had no carious, extracted or filled teeth at the time this study was carried out.

Discussion

Studies from 1990 for the city of Sarajevo showed dmft in children aged 5-7 years and that of children aged 12-15 years was 3.07 and 6.47%, respectively (4). Reasons for this extremely bad dental health were, primarily, lack of a long term public preventive program and organized school dental care, as well as low fluoride concentration in drinking water.

Comparison of our results with those of the previously mentioned study demonstrated enormous increase of dmft in pre-school children, which was 7.53% in 1999. Unlike the DMFT in pre-school children, the increase in DMFT in middle school children was less striking, being 6.47% in 1990 and 7.18 % in 1999, suggesting the conclusion that school children were better provided with dental care than pre-school children. The comparison of our results with those of Marthaler et al. for the 1990-95 period, demonstrating dmft of 0.9-5.4 in the pre-school children of 23 European countries, leads to the conclusion that our country with DMFT as high as 7.53 occupies the lowest position in Europe. Marthaler's study demonstrated DMFT of 0.9-7.7% in the school children of European countries, while our study demonstrated the DMFT of 7.18% in our country (between Poland - 5.1%, and Latvia - 7.7%).

Conclusion

Our study demonstrated extremely high dmft/DMFT in pre-school and school children. The observed poor dental health in our children was a consequence of the above mentioned factors related to the changes in living conditions during the war in besieged Sarajevo. For the purpose of improvement of oral health, we suggest the following systematic preventive dental measures:

- screening of the whole of the B&H population, using the WHO criteria;
- organizing preventive dental services;
- defining preventive programs;
- introducing obligatory oral examination of children younger than 3 years;
- obligatory oral examination of children before school enrollment;
- planning the following treatment programs:
 - a) practical instructions in oral hygiene;
 - b) plaque detection;
 - c) removal of debris and callous;
 - d) topical fluoridation;
 - e) fissure sealing;
 - f) restoration of carious teeth; and
 - g) control examination every 6 months.