

Assessment of dentition status and oral hygiene in first year dental students, Medical University of Białystok

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Abstract

Purpose: Caries, a social ailment, is one of the diseases of civilization of the 20th century. In Poland, the incidence rate of caries is very high both in the young and adults. The major etiological factors of caries are: improper oral hygiene, diet based on carbohydrate-rich and highly processed food products, neglect of prophylaxis and dental check-up. The aim of the study was to assess dental status and oral hygiene of the first year dental students, Medical University of Białystok, through the analysis of the chosen caries and dental plaque indices.

Material and methods: The study group consisted of 70 first year dentistry students, including 50 women and 20 men, aged 19-23 years. Dentition status and oral hygiene were assessed using basic dental instruments, in artificial light, in clinical settings of the Department of Social Dentistry and Prophylaxis, Medical University of Białystok.

Results and conclusions: The record analysis showed a very high caries frequency index and a low treatment index. However, proper oral hygiene was observed, which may indicate greater health-promoting awareness among future dentists. Poor dentition status found in the study group of dental students may be due to neglect of oral hygiene, prophylaxis and lack of systematic dental control in the earlier age periods.

Key words: dentition status, oral hygiene, dental students.

Introduction

Caries, a social ailment, is one of the diseases of civilization of the 20th century. In Poland, the incidence rate of caries is very high both in the young and adults [1]. The major etiological factors of caries are: improper oral hygiene, diet based on carbohydrate-rich and highly processed food products, neglect of prophylaxis and dental check-up. In adolescents, additional cariogenic factors include eating snacks between meals, excessive consumption of sweets of sticky consistency and sparkling drinks. As data concerning the oral status of adolescents that reach us from different sources are alarming we decided to perform clinical dental examinations of the oral cavity among the first year dental students of the Faculty of Medicine, Medical University of Białystok in the year 2004/2005.

Aim

The aim of the study was to assess dental status and oral hygiene of the first year dental students, Medical University of Białystok, through the analysis of the chosen caries and dental plaque indices.

Material and methods

The study was based on the medical records filed by the first year students of the Division of Dentistry, Faculty of Medicine, Medical University of Białystok, during Social Dentistry classes in the academic year 2004/2005. The study group consisted of 70 first year dentistry students, including 50 women and 20 men, aged 19-23 years. Dentition status and oral hygiene were assessed using basic dental instruments, in artificial light, in clinical settings of the Department of Social Dentistry and Prophylaxis, Medical University of Białystok. The results were recorded in the charts specially designed for epidemiological studies according to WHO [2].

Clinical records were used to calculate the following indices:

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Table 1. Assessment of dentition status and oral hygiene index

	DMFd	DMFs	SiC	TI*	OHI-S*
Women	11.72 ± 1.61	15.90 ± 2.18	16.73 ± 1.70	0.77 ± 0.22	0.54 ± 0.45
Men	12.40 ± 2.58	16.84 ± 3.51	17.67 ± 2.94	0.64 ± 0.24	0.86 ± 0.58
Total	11.91 ± 1.39	16.17 ± 1.89	17.00 ± 2.09	0.73 ± 0.24	0.63 ± 0.51

* statistically significant result ($p < 0.05$)

- the dental caries frequency index (CF), being the percentage of people affected by caries,
- the mean DMF score expressed as the sum of DMF values, where D was the sum of teeth with active decay, M – teeth missing due to caries and periodontal disorders, F – filled teeth divided by the number of study subjects,
- the dental decay intensity index – DMFd, i.e. the quotient in which the sum of DMFd values for carious teeth was divided by the number of people affected by caries,
- the surface decay intensity index – DMFs, i.e. the quotient in which the sum of DMF scores for the surfaces affected by caries was divided by the number of people affected,
- the significant index of caries – SiC, which is the arithmetic mean of DMFd for 1/3 of the population with the highest DMFd scores,
- the treatment index – TI, i.e. the number of filled teeth to the number of carious teeth plus filled teeth.

Oral hygiene status was assessed by means of OHI-S, using dental plaque liquid dye (Butler) according to the producer's instructions. Soft and mineralized deposits were assessed on 6 surfaces of 6 teeth: buccal (16 and 26), lingual (36 and 46), labial (11) and lingual (31). The following criteria were applied: 0 – lack of colour, 1 – colour up to 1/3 of tooth crown, 2 – colour up to 2/3 of the crown and 3 – higher than 2/3 of the crown.

Results

The results were subjected to statistical analysis using Mann-Whitney test and presented in tables and diagrams. Differences were considered statistically significant for $p < 0.05$ [3].

As the caries frequency index in the study group was 100%, the mean DMF score was equal to DMFd.

The overall DMFd index was 11.91, being lower for women (11.72) as compared to men (12.40), but the difference was statistically insignificant.

The overall DMFs index was 16.17, being statistically insignificantly lower in women (15.90) than in men (16.84).

The SiC showed a slight polarisation of caries. Overall, SiC value was 17.00, being lower in women (16.73) than in men (17.67), but with no statistically significant differences.

The analysis showed distinct differences in the treatment index between women and men. In women, the index was 0.77, in men - 0.64 and overall - 0.73 at $p > 0.05$.

The oral hygiene index OHI-S also revealed considerable gender-dependent differences, which was confirmed statistically. OHI-S was much lower in women (0.54) as compared to men (0.86), with 0.63 for the whole study group, $p < 0.05$.

Discussion

A comparison of the findings obtained from similar studies conducted among students of dentistry has revealed a high level of caries frequency index being maintained for a few years. Kierklo, studying a group of third, fourth and fifth year dentistry students, Medical University of Białystok, in the year 1995, found the mean DMF score to reach 14.6 overall, with women being more affected by caries (15.4) as compared to men (12.2) [4]. In a study conducted by Wawrzyn-Sobczak and Stokowska, the CF index among first and second year dental students and fourth year medical students, Medical University of Białystok, was 97% in the year 2001/2002. The mean DMF score for the whole study population was 12.8, caries intensity index was 14.28, SiC - 19.9, and treatment index - 0.74 [5].

The study results obtained in our region in the previous years [6,7] show a significant drop in DMF score as compared to our findings.

Oral health targets have been designed for Poland according to the WHO criteria, stating that 90% of 18-year-old adolescents will have complete dentition by the year 2015. This requirement has been satisfied in our students [8].

Conclusions

Summing up, the present record analysis showed a very high caries frequency index and a low treatment index. However, proper oral hygiene was observed, which may indicate greater health-promoting awareness among future dentists. Poor dentition status found in the study group of dental students may be due to neglect of oral hygiene, prophylaxis and lack of systematic dental control in the earlier age periods.

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