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REASONS FOR PATIENTS' VISITS TO DENTAL OFFICES IN CRACOW IN THE YEARS 2005-2006 AND 2013-2014

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ABSTRACT

INTRODUCTION. Caries is a serious health problem affecting the Polish population, mostly due to a low level of health awareness, which is reflected in irregular check-ups and a tendency for patients to visit the dentist only when they are already experiencing pain.

OBJECTIVE OF THE STUDY. to compare patients' reasons for visiting dental offices and the treatment they received during the years 2005-2006 and 2013-2014.

MATERIAL AND METHODS. Data was obtained from 495 medical files stored in 4 randomly selected dental offices in Cracow. Information was gathered on age, sex, place of residence, reasons for visiting the dentist, referrals, frequency of dental visits and procedures performed.

RESULTS. The study showed that women visited dental offices more frequently (56%) than men. The participants were aged between 1 and 91. The majority of the patients lived in large towns or cities (81.6%). Approximately 50% of the patients visited a dental office once a month. The study showed a significant increase in one-time visits (from 18.5% to 30.6%). The most frequent motivation for visiting a dental office was to receive conservative treatment, while the least common reasons were prophylaxis and tooth injuries.

CONCLUSIONS. Throughout the period under review, changes occurred in the profile of the patients who visited dental offices during these periods. One alarming trend was the significant increase in the number of patients who visited dental offices only once (12%). The main reason why patients visited dental offices did not change - more than 60% came to have caries treated but often after a single visit they did not continue the treatment despite needing to do so.

Key words: *epidemiological examination, oral health status, dental treatment needs*

INTRODUCTION

Polish epidemiological studies of oral health were conducted under the auspices of the World Health Organisation (WHO) in 1987 and 1995 while National Oral Health Monitoring Studies were launched in 1995. Patients in the youngest index age group in the population are examined at 2 year intervals, while adolescents and young people ending high school are tested every 3 and 5 years, respectively. Adults are examined at 5-8 year intervals (1). These studies show that dental caries and periodontal diseases remain a major health problem affecting Polish society. The oral health of Poles is significantly worse than that of the citizens of other European countries. More than 50% of 3-year old children and practically all adults have dental caries (1). Despite the high standard of dental services provided and the still growing number of dental offices in Poland compared with elsewhere in Europe epidemiological studies show that the country is still one of the lowest ranked countries on the continent. A mere 28% of Poles have all their natural teeth – one of the worst rates in European Union member states (2-4).

The objective of the study was to identify the reasons why patients visited dental offices in Cracow in 2005-2006 and 2013-2014. The study also identified the types of procedures that were performed.

The data obtained in our study will help assess whether there has been any change in the reasons for dental visits as well as in the kind and number of procedures performed on patients over the last few years. They can be a source of valuable information and provide guidelines for the future scope and direction of dental care in Poland.

MATERIAL AND METHODS

The study was based on information obtained from patient files stored at four randomly selected Cracow dental offices that provide services both within the framework of the National Health Fund and on a commercial basis. We analysed the data of a total of 495 patients visiting a specific dental office for the first time (243 in 2005-2006 and 252 in 2013-2014). This data was placed in a specially prepared questionnaire (in the annexe). The questionnaire provided specifics on the place of residence of the patients as well as their sex and age. The study assessed the reasons why patients visited the dentist, whether they had been referred to the dental office, what procedures were performed by the dentist, and whether referrals were issued. The frequency of patients' later visits to dental offices was also assessed. A statistical analysis of the results was performed with Statistica software based on the Chi-square test and the Mann-Whitney U test. Statistical significance was established at $p<0.05$

RESULTS

The patients were classified according to sex and age as well as by their place of residence as there is no regional assignment to dental care facilities. Data was gathered on 281 women and 214 men. The age of the patients varied between 1 and 91. An analysis of the patients' place of residence revealed that the majority of them lived in large towns (81.6%) with the vast majority residing in Cracow. The next largest group comprised patients living in the countryside (12.1%) followed by those from medium-sized towns (6.3%) (Tab. I).

A mere 1% of patients visiting dental offices had a referral latter issued by a dentist or general practitioner. The referrals were for a consultation or specialist treatment, e.g. prosthetic treatment. On the other hand, 21.4% of the patients obtained referrals – mainly for an x-ray examination (most commonly in connection with endodontic treatment) but also to a dental surgeon, orthodontist, prosthetist and ENT specialist. More referrals were issued in 2013-2014 than in 2005-2006 and the difference was statistically significant.

Table I. Characteristics of dental patients in terms of sex and place of residence

Variable	N=495	Years 2005, 2006 (n1=243)	Years 2013, 2014 (n2=252)
Sex			
Women	281 (56.8%)	138 (56.8%)	143 (56.7%)
Men	214 (43.2%)	105 (43.2%)	109 (43.3%)
Place of residence			
Village	60 (12.1%)	22 (9.1%)	38 (15.1%)
Medium-sized town	31(6.3%)	14 (5.8%)	17 (6.7%)
Large town or city	404 (81.6%)	207 (85.1%)	197 (78.2%)

N – number of all examined patients. n1 - number of examined patients in years 2005-2006. n2 - number of examined patients in years 2013-2014

An analysis of the frequency of visits made by patients over at least a 12-month period showed that the highest percentage of patients (50.7%) see a dentist once a month or more frequently. This percentage was a little higher in 2013-2014 than during the earlier time period. Single visits were also common among patients (24.6%), accounting for 18.5% of the total in 2005-2006 and rising to 30.5% in 2013-2014. The relatively smallest group of patients was made up of patients who visited the dentist less than once a year (1.4%) (Fig. 1).

The most common reason why patients visited a dental office was for conservative treatment (63%). A larger number of patients came to have such procedures performed in 2005-2006 (67.1%) than was the case in 2013-2014 (59.1%). The next most important reason, although one that was much less common (12.5%),

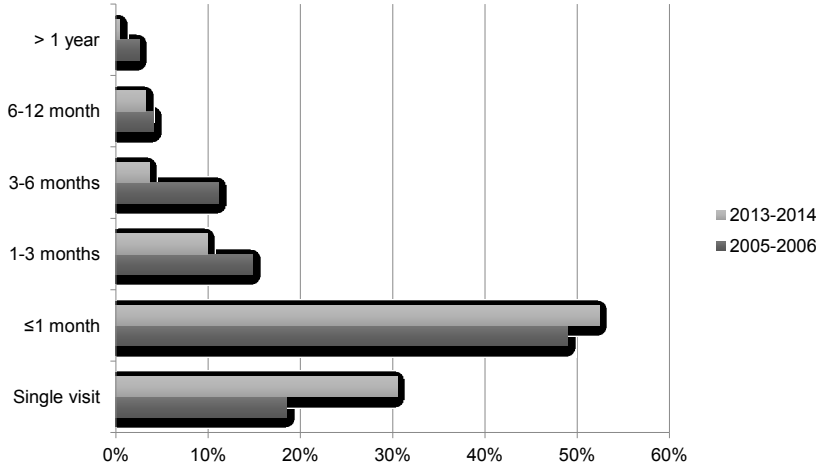

Fig. 1. Frequency of patients' visits in dental office in years 2005-2006 i 2013-2014

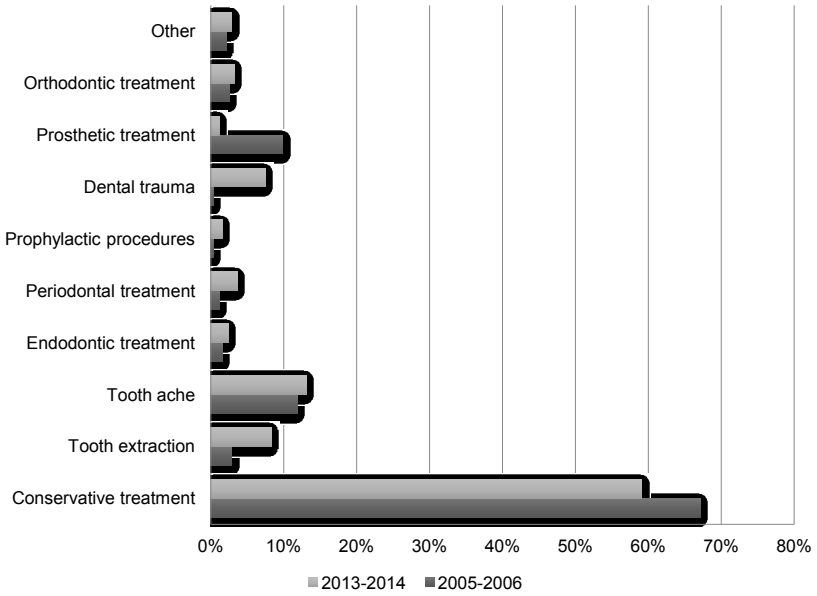

Fig. 2. Reasons for visits to dental offices in the years 2005-2006 and 2013-2014 (percentages)

was tooth ache. Patients most rarely came for hygiene-prophylactic procedures (0.4%) (Fig. 2).

The majority of the patients coming for their first visit underwent a dental examination, with significantly more such check-ups taking place in 2013-2014 (78.9%) than in 2005-2006 (70.8%). A similar relationship was observed when treatment plans were established for patients that covered advice, referrals for further treatment and x-ray tests. The percentage of deciduous teeth treated in dental offices increased twofold between the two time periods. Nevertheless such procedures are still not very common. The number of treated permanent teeth increased significantly. A total of 34.1% of patients had fillings in permanent teeth, dressings were applied in 8.1% of cases and root canal procedures were performed in another 16.8% of cases. On the other hand, the number of permanent teeth that were the subject of conservative treatment decreased slightly, while the number of prophylactic procedures performed on patients increased sharply. These included scaling, sand-blasting, varnishing, sealing and cauterisation with silver nitrate. In 2005-2006 these accounted for 12.3% of all procedures, and this figure had risen to 21% in 2013-2014. The percentage of surgical procedures performed on patients had more than doubled in 2013-2014 compared with earlier years. Prosthetic treatment with removable dentures accounted for 4.2% of all procedures and this number was similar to the previous time period. On the other hand, few fixed prosthetic restorations were made – 2.2%. Three times fewer such procedures were performed in 2013-2014 than was the case in the earlier period.

An analysis of the number of dental procedures performed on a patient during a single visit revealed that in most cases two procedures were performed (53.9%), both in 2005-2006 and 2013-2014. Also, a large number of patients underwent a single procedure (25.5%), although this percentage had dropped by almost a half compared with the previous period. In 2013-2014 the number of procedures performed in one visit had increased statistically significantly compared with the previous time period. One patient underwent up to 6 procedures on the same occasion (Tab. II). This indicates that patients prefer to visit the dentist for complex treatment, e.g. to remove calculus and have several cavities filled in a single visit, rather than spread out a treatment plan over several or even a dozen or so visits. Thanks to advances in technology the patient can undergo more medical procedures at one time.

Table II. Number of dental procedures performed on one patient during one visit

Number of dental procedures	n (%) N=495	Years 2005. 2006 (n1=243)	Years 2013. 2014 (n2=252)	p
0	1 (0.2%)	0	1 (0.4%)	<0.001
1	126 (25.5%)	80 (32.9%)	46 (18.3%)	
2	267 (53.9%)	127 (52.3%)	140 (55.6%)	
3	65 (13.1%)	30 (12.3%)	35 (13.9%)	
4	29 (5.9%)	5 2(.1%)	24 (9.5%)	
5	6 (1.2%)	1 (0.4%)	5 (2%)	
6	1 (0.2%)	0	1 (0.4%)	

N – number of all examined patients. n1 - number of examined patients in the years 2005-2006. n2 - number of examined patients in the years 2013-2014. p – probability

DISCUSSION

To sum up, a number of changes can be observed in the profile of the patients visiting dental offices between the two study periods. The study was conducted in

Cracow and the majority of the patients were residents of this city, although there was also an increase in the number of patients from the countryside who came to Cracow for treatment. The study revealed that more women than men visited dental offices, in particular to have check-ups. These observations have been confirmed by other authors. Women care more about their health, including their oral health, are more aware of the general medical consequences of poor hygiene and more regularly visit dental offices (5-8).

On the other hand, one alarming trend revealed in the studies is the decline in the dental visits made by both women and men. On the one hand, the highest percentage of patients make regular visits and there was even an increase in frequency in this group. On the other hand, there was a decline in the frequency of visits made by those patients who visit the dentist more rarely than once a month. There was also a significant increase in the number of patients who made only one-off visits to the dentist. This may be evidence of the existence of a large group of patients who only seek dental treatment occasionally – often when experiencing pain – or of patients who have no regular dentist and who often change their place of treatment. With the ever increasing availability of dental services (a growing number of dental offices) patients are changing their approach to treatment and are keen to use new services on offer, as one author (9) observed in her study. The health awareness of many of the patients in the study remains poor. The authors gave a number of reasons for why people did not visit a dentist, such as a fear of pain as well as a lack of time, need or money for treatment (5-7,9). According to data from the literature Poland is in third place in Europe when it comes the number of patients who do not visit a dental office regularly. Only Greece and Spain are above them in this respect (10).

Our studies show that the vast majority of patients visited a dental office for the purposes of conservative treatment. The next largest group of patients visited the dentist because of toothache. Quite a large number of patients also visited the dentist to have teeth extracted. The percentage of those who required extractions was especially high in 2013-2014. Our data are in accordance with the results of studies conducted by other authors. The average patient often visits the dentist for surgical treatment, including standard extractions. The poor health awareness of patients is evident in the fact that they often only visit the dentist when they are actually experiencing pain (5,7,11,12). For the most part patients prefer to seek treatment for already existing complications rather than to try and prevent any disease from developing (13). Our studies indicate that only a very small number of patients visit the dentist for prophylactic and hygiene procedures. In 2013-2014, on the other hand, more patients visited a dentist for specialist periodontal, endodontic and orthodontic treatment.

During the years covered by the study there was an increase in the number of referrals issued for further treatment and for x-rays. Such results are evidence of the greater availability and more widespread use of x-ray exams and the increasing need for specialist treatment, which has also been noted by other authors (14-16).

Very few children paid visits to dental offices. The percentage had admittedly increased in 2013-2014 compared with the earlier period, but in relation to the total number of people covered in the study the amount of deciduous teeth treated during this period was very small. Likewise, other epidemiological studies show that children in Poland and other states around the world still make up a small group of patients and their oral health is often poor (7,17-19). Data on conservative treatment for adults is more optimistic. The studies we conducted during the years in question revealed a decline in the number of conservatively treated teeth. This does not change the fact that tooth decay remains a major social problem in Poland and in the world as a whole and that the majority of patients visiting dental offices still require some form of care (20,21).

We observed an increase in the number of prophylactic-hygienic procedures performed. Although patients rarely visit dental offices for hygiene and prophylactic purposes, dentists are performing these procedures more and more often. Perhaps in the future this will have a positive impact on the oral health of the population. Unfortunately we have also noticed that quite a large number of extractions continue to be performed and the number of such procedures more than doubled during the years covered by the studies.

The studies show that the oral health of the Polish population remains unsatisfactory. Compared with developing countries our health care and health awareness are at a good level. A study conducted in India in 2012 showed that approximately 30% of respondents aged 15-65 had never visited a dentist despite the fact that all of them suffered from dental problems. The majority of those who had visited a dentist before had done so less than once every 2 years. The most popular reason for visiting a dental office was pain in the oral cavity and none of those taking part in the study had come for a check-up. Almost 45% of all procedures involved extractions (22). As the authors noted in their studies, in highly developed countries, for example in the United States in 1999, the most common reason why patients with teeth aged over 55 visit the dentist is for a check-up or for hygiene procedures (71.8%) (23). A similar picture emerges with edentulous patients (43.8%) (23). Moreover, patients in Western Europe and Scandinavia visited dental offices more regularly than in other regions and a more frequent reason for doing so was

prophylaxis (24,25). Unfortunately, Polish patients do not usually go to see their dentist for a check-up or for prophylaxis, but only when they are experiencing pain, which significantly impedes treatment and may lead to premature tooth loss. The data from the literature show that the percentage of people who are edentulous or have experienced major tooth loss remains high and may even exceed 40% (26).

CONCLUSIONS

1. Residents of Cracow and the surrounding area are aware of the importance of prophylaxis in preventing oral diseases as well as of the need to go to the dentist for check-ups.
2. Patients are insufficiently motivated to have their teeth and other pathological conditions treated systematically and usually only go to the dental office when they are experiencing problems.
3. Not enough time is devoted in dental offices to the problem of prophylaxis and making patients aware of its importance.
4. Many patients in Cracow and the surrounding area cannot afford private dental treatment and can only take advantage of those procedures reimbursed by the National Health Fund, and these do not cover all their treatment needs.

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Year of dental visit:

Place of residence: village ☐ medium-sized town ☐ large town or city ☐

Sex of patient: woman ☐ man ☐

Age of patient:

0-6 ☐ 18-30 ☐ 46-60 ☐

7-18 ☐ 31-45 ☐ >60 ☐

Did the patient have a referral? YES ☐ NO ☐

If YES, what was the specialisation of the referring doctor? .....

Did you issue a referral for the patient? YES ☐ NO ☐

If YES, what was the purpose of the referral? .....

Frequency of visits made by patient to a given dental office:

Single visit ☐ ≤ 1 month ☐ 1-3 months ☐ 3-6 months ☐

6-12 months ☐ less than 1 year ☐

Reason for patient's visit:

1. Conservative treatment ☐
2. Tooth extraction ☐
3. Toothache ☐
4. Endodontic treatment ☐
5. Periodontal treatment ☐
6. Prophylactic procedures ☐
7. Dental trauma ☐
8. Prosthetic treatment ☐
9. Orthodontic treatment ☐
10. Other ……

Performed procedure:

1. Examination and treatment plan ☐ (Including referral ☐ and x-ray ☐)
2. Temporary dressing in a permanent tooth ☐
3. Temporary dressing in a deciduous tooth ☐
4. Filling in a permanent tooth ☐
5. Filling in a deciduous tooth ☐
6. Root Canal Treatment ☐
7. Prophylactic-hygienic procedures ☐
8. Surgical treatment ☐
9. Removable prosthetic restoration ☐
10. Fixed prosthetic restoration ☐
11. Other ☐