

Comparative Analysis of Dental Morbidity as a Basis of People's Demand for Dental Services

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Abstract

Treatment and preventive care of population is the main activity of any dental institution. Thus, access and efficacy of dental help depend on the level of its organization and management, and precise work in all parts of the medical institution. Sociological surveys, being organized in order to determine the degree of the people's satisfaction with dental care, are the means to control its quality. Studying the structure of morbidity from the data of appealability allows to address a number of questions, although it does not give its complete characteristics. It also allows to assess the status of dental care for population, as well as medical aid appealability of individual social groups in specialized medical institutions, departments and offices, the amount of medical assistance to various groups of population, and to plan treatment and prevention activities rationally.

Keywords: dental morbidity, demand, dental services.

INTRODUCTION

In the modern dentistry a great importance is paid to the search for effective ways of targeted caries prevention, as well as prevention of periodontal disease and its integration at all levels. The study of dental morbidity causes certain difficulties. Now it is recognized that the data on the prevalence of major diseases should be based on the results of selective examinations of certain population groups [1].

The study of the structure of morbidity from the data of appealability allows to address a number of questions, although it does not give its complete characteristics. It also allows to assess the status of dental care for population, as well as medical aid appealability of individual social groups in specialized medical institutions, departments and offices, the amount of medical assistance to various groups of population, and plan treatment and prevention activities rationally [2].

Oral hygiene is the main method of primary prevention of dental diseases [3]. Currently, there are many methods of preventing dental diseases [4; 5] allowing to improve oral hygiene through various means that have the maximum preventive effect in solving dental problems.

It is established that regular oral hygiene has only preventive value expressed in a decrease in the prevalence of caries [3]. The available means of individual oral hygiene include toothbrushes and pastes, flosses, interdental brushes, and rinses [6]. Professional oral hygiene is also of great importance, it includes a range of activities: removal of dental plaque, training for personal oral hygiene and control, adjustment of means and methods of hygiene. Remizov S.M. [7] recommends to apply professional oral hygiene means in all the patients with an increased risk of developing dental diseases.

Operative and restorative treatment of teeth refers to the secondary methods of prevention.

Various filling materials [8; 9] are used for operative and restorative treatment of teeth in dentistry.

Main activity of the dental institution is preventive maintenance treatment of population. In this regard, the availability of quality and efficient dental care depends on the level of its organization and management, the clarity of the work of all parts of medical institution [10].

The means of control over the quality of dental care can also include sociological surveys organized in order to determine the degree of satisfaction of population with dental care.

The aim of the study is to identify and substantiate effective methods of treatment and preventive work among the adult population of Penza city and the Penza region.

MATERIALS AND METHODS

The study involved 350 adults who lived permanently in the Penza region according to the WHO methodology (World Health Organization). The study was carried out on the basis of dental institutions of municipal and departmental forms of ownership serving the adult able-bodied population of Penza city and the Penza region.

The analysis of information was carried out by means of clinical observation, sociological analysis and establishing the parameters of interest to patients, evaluation of the quality and effectiveness of medical and preventive care provided.

The formation of statistical population was carried out through selective observation. The study included 350 persons from the adult able-bodied population of Penza city and the Penza region at the age of 20 to 60 years. 150 subjects underwent therapeutic measures, uncomplicated caries was cured in 1,920 teeth. 200 patients were included in the control group.

All patients were divided into 4 groups depending on the complex of therapeutic measures performed.

The following measures were taken in the first group: oral sanitation; professional oral hygiene with training of the patient, control of the individual oral hygiene with toothpastes and brushes. Composites (light and chemically cured) were used to restore anatomical shape of the tooth; as well as glass ionomer cement.

In the second group the following measures were taken: oral sanitation; professional oral hygiene with training of the patient, control of individual oral hygiene, selection of recommended toothpastes and brushes; and caries-preventive fluorine application. Composites (light and chemically cured) were used to restore anatomical shape of the tooth; as well as glass ionomer cement.

The following measures were taken in the third group: oral sanitation; professional oral hygiene with training of the patient and control of individual oral hygiene, selection of recommended toothpastes and brushes; caries-preventive Glufluor application. Composites (light and chemically cured) were used in order to restore anatomical shape of the tooth; as well as glass ionomer cement.

The fourth group was the control one.

The formed groups were equivalent in terms of the data studied. The number of women and men was almost equal (180 women and 170 men).

In order to standardize dental caries morbidity, carious lesions were detected visually. The intensity of dental caries was assessed by the magnitude of CFE index (a sum of carious, filled, and extracted teeth), and the prevalence was expressed as a

percentage by the method recommended by the WHO. We studied the structure of CFE index, including those by the age groups.

Yu.A. Fedorov and V.Volodkina (1976) indices, and simplified index of oral hygiene of Green-Vermillion were used in order to assess the state of the oral hygiene.

Periodontal disease morbidity was assessed according to the standard procedure by using conventional CPI indices, Green-Vermillion, CPITN.

The state of fillings was assessed according to the criteria of G. Ruge (1998).

At the same time, we detected marginal adaptation of the fillings, the discoloration of the edges of the cavity, and the presence of secondary caries. Clinical diagnosis of secondary caries was established when a carious process was found near the filling. When a change in the color of the hard tissues of the tooth was detected around the filling, we presumed about recurrent caries.

Oral health - teeth, fillings, oral hygiene level - was assessed before the treatment, immediately after the treatment, and after 6 months and 1 year.

The questioning of those who applied for dental care was carried out directly in the facility. The questionnaire was given to the patient before the dental appointment but was filled mostly after the visit to a doctor.

Databases collected by us containing information on the characteristics of patients and the results of the study were subjected to statistical processing by using applied software packages.

RESULTS AND DISCUSSION

A total of 350 people (180 women and 170 men) aged from 20 to 60 years with 1,920 teeth treated for uncomplicated caries were examined. For the treatment of dental caries, we used filling materials, which were allocated for budgetary appointment. They included chemically cured composite Compolight; light cured composites Filtek and Prismafil; as well as glass ionomer cement Glassin.

Then fillings were made from the above-noted materials:

- chemically cured - 1,036 (53.9%); composites - 960 (92.7%), Glassin - 76 (7.3%); - light cured - 884 (46.0%); Filtek - 184 (20.8%), Prismafil - 700 (79.2%).

Best preservation (after 12 months) was typical for light cured fillings. Thus, while the proportion of fell-out fillings made of Glassin to the preserved ones was 1:9.5, in the group of light cured composites this ratio was 1:8, when using Prismafil - 1:13.5, and when using Filtek - 0:184.

The fillings most commonly fell out of the teeth with cavities of II and V classes by Black. Thus, the ratio of fell-out and preserved fillings by the cavity classes was the following: for class I - 1:33; for class II - 1:19.6; for class III, IV - 1:38.4; for class V - 1:3.5, and for combination of II and V classes - 1:3.6.

Six months later, the worst result was observed for the chemically cured composite fillings, especially according to the criteria "anatomical shape" and "discoloration of the cavity edges". The same results were obtained by filling the class V carious cavities with the light cured material Prismafil. When glass ionomer cement Glassin was used, only the color of the cavity edges changed after 6 months, while such parameters as "marginal adaptation", "anatomical shape" and "caries criterion" virtually did not differ from these parameters for fillings made of Filtek. The maximum score by all criteria was observed in the group of patients who used the light cured material Filtek.

Teeth fillings made from Filtek retained a high score by all the criteria and after 12 months, while fillings made from

Prismafil, Compolite and Glassin significantly changed their properties and differed from the fillings made of the light cured materials of the Filtek group.

Thus, it has been found that in the adult population, when filling the carious cavities of class II and V, it is better to use the light cured materials.

The results of assessing the fillings' preservation showed that after one year, up to 7.4% of the fillings made from the domestic light cured material Prismafil, 12.5% of those ones made from the chemically cured composite, and up to 10.5% of fillings made from glass ionomer material Glassin fell out, while only fillings from microhybrid light cured composite Filtek retained their integrity by 100%.

CONCLUSION

Based on the results, we believe that the following measures are to be implemented in the city:

a) to develop and implement a targeted comprehensive program of dental prophylaxis in the coming years;

b) to expand the network of paid dental offices and paid services departments with certified specialists that allow the introduction of modern methods for prevention and treatment of dental caries, its complications, periodontal disease and oral mucosa disorders;

c) to carry out an active health education work, including mass media, aimed at promoting knowledge about the importance of individual dental prophylaxis of caries and periodontal disease.

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