

Analysis Of The Dental Morbidity Of The Population Of A Large City (Moscow) According To The Data Of The Appeal

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Abstract.

Materials of dental morbidity of the population according to the data of treatment and prevention institutions are very important for the purposes of current and future planning of dental care. Despite the fact that the materials of the referral rate most often can not give a complete picture of the so-called "true morbidity" of the population, they are, nevertheless, absolutely indispensable for determining the frequency of outpatient visits in a variety of forms of dental and oral pathology.

Of particular relevance are the issues of studying the current state and prospects for the further development of dental services operating in the territories of the constituent entities of the Russian Federation, with the development of scientifically based recommendations for optimizing the system for providing the population with affordable and qualified dental care in the required volume and of high quality.

Taking into account this circumstance, the article provides an in-depth study of the appeal of the population of Moscow for dental care and obtaining information that allows us to assess the age-sex and social sections.

Key words: referral rate, dental morbidity, organization of dental care.

Introduction. Dental care is currently one of the most widespread types of medical care, which is associated with high rates of dental morbidity of the population, both in our country and around the world [1,2,3,4].

Indicators of treatment and attendance, both in general and in individual specialties (therapeutic, surgical techniques), characterize the work of dental doctors and, with the correct organization of the treatment process, are one of the most important conditions for establishing the

relationship between the morbidity of the population and the treatment for therapeutic purposes, justifying the indicator of the multiplicity of outpatient visits for certain forms of dental diseases [5.6.7].

To study the activities of individual dental institutions and dental services in general, the data characterizing the contingents of the population seeking dental care are of undoubted interest.

The purpose of the study is to evaluate the contingents of patients seeking dental care in medical organizations, using the example of residents of a large region (Moscow and the Moscow region).

Material and methods. The study was conducted on the basis of a systematic approach and the use of modern statistical and analytical methods

The period of studying dental morbidity by the circulation of the population of a large city covered 2016-2020.

Determining the required number, we used a formula to calculate the volume of a representative sample, used in cases where the size of the general population is known (K.I. Zhuravleva, 1981).

In total, more than 9 thousand primary accounting forms have been studied, including in-depth data copying on observation maps - 2925 documents.

The analysis of the causes of the population's seeking dental care is carried out using a special classification developed on the basis of the ICD headings of the 10th revision.

Results. Among the people who applied to dental clinics in the Leningrad region during the three years studied, about a quarter were men (23.4%) and a little more than 3/4 - respectively women (76.6%). This circumstance once again confirms the fact that women in general are more attentive to their dental health than men.

The analysis of the age structure of the population who applied for dental care showed that the largest proportion of requests, namely 60.7%, falls on people under the age of 45. Moreover, it should be noted that the majority of applicants belong to the age group of 30 - 39 years

(Table 1). Distribution of Moscow residents who applied for dental care by gender and age (in % of the total)

Gender	Age group							
	15-19 year-old	20-29 year-old	30-39 year-old	40-49 year-old	50-59 year-old	60-69 year-old	70 year-old and older	Total

Male	2,2	3,1	5,8	5,5	2,2	3,4	1,2	23,4
Female	4,0	13,2	21,2	16,0	8,1	9,8	4,3	76,6
Male and female	6,2	16,3	27,0	21,5	10,3	13,2	5,5	100,0

Data on the social structure of the contingents of the applied population are of particular interest in the socio-hygienic characteristics of the dental care. Of the total number of those who applied for dental care, more than 2/3 were working and students, and almost 1/3 were unemployed and pensioners.

It is characteristic that the main share consists of persons engaged mainly in intellectual work, i.e. employees (38.7%). They are followed by pensioners (21.4%), workers (20.7%), unemployed able-bodied persons (10.0%) and students (8.4%). It is noteworthy that workers prevail among men who have applied for dental care.

The distribution of applicants for the immediate purpose of their treatment for outpatient dental care is of great interest. For example, 3.7% of the total number of all appeals are made for preventive examination without presenting any specific complaints on their own initiative or by referral. Such a significant proportion of those who applied for preventive purposes is due to the fact that in this group are concentrated not only persons undergoing preventive examination on their own initiative, but also patients sent for dental examination by doctors of other specialties, including if necessary, the conclusion on the sanitation of the oral cavity.

It should be noted that the main part of appeals (90%) is associated with dental caries (36.8%) and its immediate complications - pulpitis (22.1%) and periodontitis (31.1%). As can be seen, the greatest share in the overall structure of all the reasons for the adult population seeking dental care falls after dental caries on periodontitis.

Other inflammatory diseases of the maxillofacial region (alveolitis, periostitis, osteomyelitis, abscesses and phlegmons) together make up only no more than 1.6%. At the same time, more than half (54.8%) of all population requests for dental care are caused by complications of the carious process, including pulpitis, periodontitis, and various inflammatory processes of odontogenic etiology. This circumstance, considering the insignificant proportion of preventive appeals, indicates that the population mainly seeks help with already neglected forms of dental pathology.

Obviously, this is to some extent due to the insufficient availability of dental care.

Attention is drawn to the fact that, despite the high prevalence of periodontal diseases among the population, their share in the overall structure of the causes of the population seeking dental care is small and amounts to only 3.5%. At the same time, 0.1% accounts for gingivitis, 3.2% for periodontitis and 0.2% for periodontal disease.

The information about what proportion of certain reasons for seeking dental care among residents of the Moscow region and the city of Moscow is of particular interest, depending on their gender (Table 2). So, if in women, as well as in the whole population, dental caries takes the first place (38.9%), and periodontitis takes the second place (28.3%), then in men, on the contrary, periodontitis is the main cause of complaints (39.2%), and it is followed by dental caries (31.5%).

Obviously, this is to some extent due to the insufficient availability of dental care.

As for pulpitis, they are both in women and men, firmly occupies the third place. From the numerical data given in the table, it can be seen that men, in comparison with representatives of the opposite sex, generally have more severe forms of dental pathology.

To study the organizational aspects of outpatient care for the population, the analysis of attendance data is extremely important. This provision also applies to the dental care system. Thus, the average level of attendance at dental institutions during the study period was 0.85 per year per inhabitant of the Moscow region and Moscow. At the same time, the largest share of the accumulated level of visits for dental care was recorded in the age groups of 30-39- and 40–49-year-old people (30.3% and 21.0%, respectively), who together made more than half (51.3%) of all visits to dental institutions.

Table 2 The structure of the reasons for seeking dental care in persons of different sexes (in % of the total)

The reason for the appeal	Male	Female	Male and female
Preventive purpose	3,8	3,4	3,7
Teething anomalies	0,2	0,2	0,2
Tooth decay	31,5	38,9	36,8
Pulpitis	18,8	23,2	22,1
Periodontitis	39,2	28,3	31,1
Gingivitis	0,2	0,1	0,4
Periodontitis	1,6	3,7	3,2
Periodontal disease	0,2	0,1	0,2
Alveolites	1,3	0,5	0,7
Periostitis	1,3	0,4	0,6
Osteomyelitis	-	0,1	0,05

Stomatitis	1,5	0,7	0,9
Phlegmons and abscesses	0,2	0,3	0,2
Maxillofacial parts	0,2	-	0,05
Others	-	0,1	0,4
Total	100,0	100,0	100,0

The lowest indicators of the accumulated level of visits are noted in the two extreme age groups (15–19-year-old and 70-year-old people and older people), whose representatives together account for only every 10th visit.

For the most complete study of the dental morbidity of the population according to the data of the appeal to a certain extent, data on the indicators of certain types of dental care provided can serve. According to the materials of the study, it has been found that, on average, 4.20 teeth have been sealed, and 1.14 teeth have been removed from one resident of the Moscow region and the city of Moscow during the three years studied. Also, the following average values of dental treatment cases per one applicant: dental caries - 3.57, pulpitis - 0.66, periodontitis - 0.29, periodontal diseases - 0.09, diseases of the oral mucosa - 0.04, inflammatory diseases of the maxillofacial region - 0.07, injuries of the maxillofacial part - 0.0005. At the same time, these indicators of dental care vary in men and women.

As a result of studying the appeal data, it has been found that some patients after the initial visit to the dentist in connection with the exacerbation of a particular disease receive emergency care and later come to the next doctor's appointment. Within three years, such cases were recorded in 11.5% of residents of the Moscow region and Moscow who applied for dental care.

In the general structure of unfinished cases of treatment, pulpitis (47.1%) occupies the first place, periodontitis (34.5%) is the second, periodontal diseases (8.8%) are the third, and inflammatory diseases (8.3%) are the fourth.

The statistical development of the circulation materials allowed us to determine the intensity of the population affected by dental caries. At the same time, not only were the values of the **KPU** indexes established in the context of various groups of the adult population of the Moscow region and the city of Moscow, but also an analysis of individual elements of these indicators was carried out. Thus, the average resident who applied for dental care had more than half of the teeth affected (57.8%). At the same time, the average intensity coefficient of caries was 15.5 ± 0.34 teeth with the following structure of the **KPU** index: $K = 3.4 \pm 0.14$, $P = 8.7 \pm 0.23$, $U = 6.4 \pm 0.35$. It is noteworthy that women's teeth are more intensively affected by caries than men's ($KPU\ 18.8 \pm 0.37$ versus $17.7 \pm$

0.75). At the same time, women, compared with men, have on average slightly fewer carious teeth ($K = 3.2 \pm 0.16$ vs. 3.9 ± 0.30), removed teeth ($U = 6.4 \pm 0.41$ vs. 6.6 ± 0.72) and the number of sealed teeth is noticeably predominant ($N = 9.2 \pm 0.27$ vs. 7.0 ± 0.42).

Discussion. Of undoubted interest is the determination of the level of dental care among the population of the Moscow region and the city of Moscow according to the appeal data. Using the average coefficients of the KPU and information on the number of carious teeth (element "K") and teeth removed, but not replaced with a prosthesis, age-sex indices of the **level of dental care (LDC)** have been calculated according to the methodology described in the second chapter of this dissertation. Attention is drawn to the fact that in no age-sex group of the population, the value of the **LDC** index will not allow it to be rated "good". In general, as in the vast majority of age and gender groups, this indicator is assessed as satisfactory. At the same time, it should be noted that the lowest level of dental care was recorded in men in the age range of 60-69 years, and the **LDC** indicator in this case is estimated only as "insufficient".

The analysis of indicators of the intensity of dental caries and indices of the level of dental care in the context of social groups of the population of the Moscow region and the city of Moscow region according to the data of appeal also does not allow us to draw positive conclusions.

In the structure of the KPU index, the element "P" prevails in all social groups with the exception of pensioners, for whom the element "U" is naturally the leading one.

For the most complete characterization of the dental morbidity of the population according to the data of circulation, a special role is played by the study of indicators of **temporary disability (TD)** caused by various dental diseases. At the same time, it is necessary to take into account information about the number of cases and days of disability, the average duration of one case of **TD** both in general and for individual forms of dental pathology.

In addition, it is important to consider the share of each disease or other cause in the overall structure of common causes of temporary disability, such forms of acute odontogenic inflammatory diseases as periostitis (45.1%) and periodontitis (17.3%) should be distinguished. In addition, there are periodontitis (2.6%), alveolitis (2.0%), osteomyelitis (1.8%), abscesses and phlegmons (1.1%), lymphadenitis (0.4%), odontogenic inflammation of the air-bearing sinuses of the skull bones (0.2%) and other diseases of the maxillofacial part.

In the second and third places among the main groups of causes of temporary disability are exemptions from work due to planned surgical interventions in a dental clinic (9.8%) and cases of disability to care for sick children suffering from certain types of dental pathology (6.9%). At the same time, the terms of temporary disability due to these reasons do not exceed 5 days on average.

An important place in the structure of dental morbidity of the population with temporary disability is occupied by injuries of the maxillofacial parts, which together account for 6.7% of all cases and 14.0% of days of disability with an average duration of one case of 11 days.

Table 3 Indicators of hospitalized dental morbidity of the population of the Moscow region and the city of Moscow

Diagnosis	Cipher of the ICD - X categories	Share in the number of cases of inpatient treatment (%)	Share in the number of cases of inpatient treatment (%)	Average duration of 1 case (in bed days)
Periostitis	52, 730	5,5	3,7	5,3
Osteomyelitis	730	20,9	21,2	8,0
Abscesses and phlegmons	528, 682	14,9	11,5	6,1
Diseases of the salivary glands	527	3,0	3,0	7,9
Lymphadenitis	683	7,6	6,1	6,4
Stomatitis	528	0,9	0,9	8,2
Maxillofacial cyst	526, 528	2,4	2,2	8,2
Benign and malignant maxillofacial tumors	210-229	5,1	9,0	13,8
	140-208	1,8	1,1	4,7
		3,3	7,9	18,8
Injuries of the maxillofacial part - fractures of the lower jaw - fractures of other bones - other injuries	820,	73,0	40,1	8,5
	910	28,2	30,8	8,6
	920,	2,1	1,9	6,1
	941	6,7	7,1	8,7
Other diseases	039, 350 522,718	2,7	2,3	6,8
Total		100,0	100,0	7,9

Indicators of dental morbidity with temporary disability of the population allows the study of data on hospitalized morbidity. Statistical processing of hospitalization materials showed that about 1/2 (49.0%) of all inpatient dental patients are persons with various inflammatory diseases of organs and tissues of the maxillofacial region.

Among the inflammations, osteomyelitis is the leading cause of hospitalization, accounting for more than 1/5 of both all cases (20.9%) and all days (21.2%) of inpatient treatment, with an average duration of hospitalization of 8 bed days (Table 3).

The second place in the overall structure of hospitalized dental morbidity is occupied by traumatic injuries of the maxillofacial region (37.0% of cases and 40.1% of the total number of bed days). Attention is drawn to the fact that 3/4 of all injured are patients with fractures of the lower jaw, leading in their specific gravity (28.2%) among other types of dental pathology that caused hospitalization.

Inpatient dental patients with neoplasms of maxillofacial localization should be singled out in particular. They account for 5.1% of all cases and 9.0% of days of hospitalization with an average length of stay in a bed of about 14 days. According to all indicators, malignant tumors prevail over benign ones, and inpatient treatment of patients with malignant tumors lasts almost 4 times longer than patients with benign ones.

Other diseases account for 2.7% of the total number of cases and 2.3% of the number of days of inpatient treatment in the total structure of hospitalized dental morbidity. The average duration of one case of hospitalization is 6.8 bed days for other diseases and 7.9 bed days in general for all cases.

Conclusions. Thus, the study of the materials of the population's appeal for dental care in the context of data on the general dental morbidity registered in outpatient settings, as well as indicators of morbidity with temporary disability and hospitalized morbidity, provides valuable information for analyzing the state of dental morbidity of the population and the content of the dental service.

It is necessary to develop ways to optimize the flow of patients, redistribute the resources of dental clinics, reduce cases of temporary and permanent disability as a result of optimizing the activities of the medical care system for patients, which will contribute to improving the quality of medical care provided to the population and will lead to the optimization of public spending both on the actual activities of the health care system as a whole and on its individual areas, in our case, dental care.

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