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Research Article

MEDICAL AND SOCIAL ASPECTS OF MAXILLOFACIAL DISEASES, DEPENDING ON DURATION OF TEMPORARY DISABILITY

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Abstract:

Medical and social assistance in maxillofacial diseases includes prophylactic, therapeutic and diagnostic, rehabilitation, prosthetic and orthopedic dentistry, social measures for disabled or invalid patient care, as well as the payment of temporary disability benefits. The source of information was temporary disability cases established by dental medical organizations of the Republic of Tatarstan (analysis of accounting-and-reporting forms 16-BH, 036/y, 035/y, 043/y for the period 2007-2016). The research material was subjected to statistical processing using the methods of parametric and nonparametric analysis in accordance with the results of testing the compared sets for normality of distribution. As a result of the research, it was found that there were no statistically significant differences in the distribution of temporary disability cases in maxillofacial diseases by gender, depending on the month of the year ($p=0.611$). Regardless of the season, the rate of complaints was higher among women, ranging from 53.1% in November to 60.4% in May. The statistically significant differences in the distribution of temporary disability cases by age groups depending on the month of treatment were revealed ($p=0.035$). Also, in accordance with the data obtained, the highest values differed in the duration of temporary disability cases due to the treatment of patients with maxillofacial diseases in August. The shortest temporary disability cases were noted in December and March.

Keywords: dentistry, temporary disability examination, maxillofacial diseases, dental medical organization.

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INTRODUCTION:

Medical and social assistance in maxillofacial diseases includes prophylactic, therapeutic and diagnostic, rehabilitation, prosthetic and orthopedic dentistry, social measures for disabled or invalid patient care, as well as the payment of temporary disability benefits [1,2,3,4]. The disability is a multifactorial process reflecting the state of health of the working population, the formation of which depends on many factors [4,5]. In the treatment of maxillofacial diseases with temporary disability in dental medical organizations, its duration is, on average, 5.23 (± 0.02) days [6,7]. There are many reasons that can affect the duration of temporary disability in maxillofacial diseases, however, in the modern literature, the issues of treatment of patients with maxillofacial diseases are not fully disclosed in the medical and social aspect, i.e. the relationship of temporary disability cases and factors affecting its duration [8,9,10,11,12].

Research objective:

Medical and statistical analysis of factors affecting the duration of temporary disability cases in maxillofacial diseases in the Republic of Tatarstan in 2007-2016.

MATERIAL AND RESEARCH METHODS:

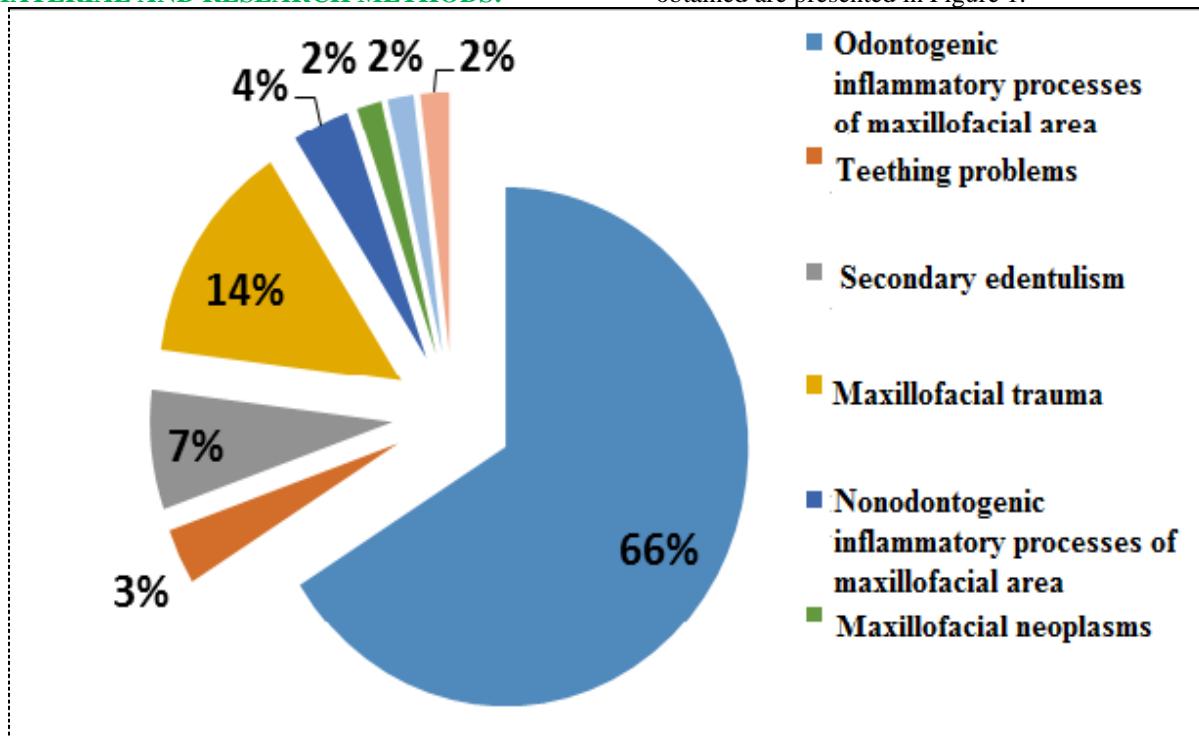


Fig.1. The structure of maxillofacial diseases, leading to the temporary disability in the Republic of Tatarstan.

The source of information was temporary disability cases established by dental medical organizations of the Republic of Tatarstan (analysis of accounting-and-reporting forms 16-BH, 036/y, 035/y, 043/y for the period 2007-2016). The research material was subjected to statistical processing using the methods of parametric and nonparametric analysis in accordance with the results of testing the compared sets for normality of distribution. The initial information was accumulated, corrected, systematized and the results were visualized in Microsoft Office Excel 2016 spreadsheets. The statistical analysis was performed using IBM SPSS Statistics 23.

RESULTS:

The total number of studied temporary disability cases, established in the dental medical organizations of the Republic of Tatarstan in 2007-2016, amounted to 12,891 units, which we took as the general population. The statistical analysis was carried out using the sampling method, in which, based on mathematical calculations, the number was 5,204 cases.

We have studied the structure of temporary disability cases by nosological groups over time. The data obtained are presented in Figure 1.

The data obtained indicate that odontogenic inflammatory processes of maxillofacial area, reported in 66.1% of cases accounted for the largest rate in the structure of temporary disability causes in patients of dental medical organizations. The maxillofacial injuries, whose rate in the general structure was 13.9%, took the second place, the secondary edentulism, observed in 384 patients, or in 7.4% of cases, took the third place.

The duration of temporary disability in maxillofacial diseases is the main medical and social indicator that

reflects the nature of the disease, the quality of dental care and affects the economic component in the payment of temporary disability benefits. Analyzing the data obtained, we have identified the influence of various factors, one of which is the seasonality of patient encounter. When comparing the duration of temporary disability cases depending on the month of the year of treatment using one-way analysis of variance, the statistically significant differences were established ($p<0.001$). Figure 2 compares the values of the studied indicator.

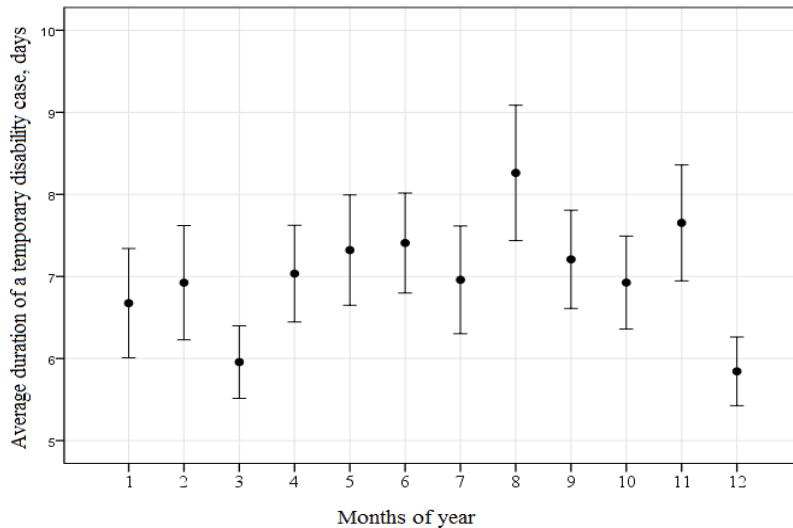


Fig. 2 –Comparison of the average duration of a temporary disability case in maxillofacial diseases, depending on the month of treatment initiation

In accordance with the data obtained, the duration of temporary disability cases, when the patients with maxillofacial diseases sought dental care in August, differed by the highest values, the shortest cases were registered in December and March. When comparing the values of the indicator in December and August, the level of significance of differences corresponded to $p=0.004$, while comparing the indicators in March and August the level of significance of differences corresponded to $p=0.011$. The duration of temporary disability cases in the remaining months took comparable values without statistically significant differences.

Another factor affecting the duration of temporary disability cases is the nosological group to which the underlying disease pertained (Table 1).

Table 1: The duration of temporary disability cases in maxillofacial diseases, depending on the nosological group

Nosological group	Duration of temporary disability cases, days	
	M±m	95% ДИ
Odontogenic inflammatory processes of maxillofacial area	5.61±0.08	5.46-5.77
Teething problems	6.13±0.35	5.44-6.82
Secondary edentulism	8.57±0.36	7.87-9.27
Maxillofacial trauma	11.79±0.36	11.07-12.5
Nonodontogenic inflammatory processes of maxillofacial area	7.61±0.46	6.7-8.52
Maxillofacial neoplasms	7.83±0.63	6.57-9.08
Maxillofacial anomalies	12.18±1.26	9.67-14.69
Polypathia	8.15±0.8	6.57-9.73

According to the research, the duration of temporary disability cases had statistically significant differences depending on the nosological group to which the underlying disease pertained ($p<0.001$). The average duration of temporary disability case was the longest in patients with maxillofacial abnormalities and injuries, amounting to 12.18 ± 1.26 days and 11.79 ± 0.36 days, respectively. The odontogenic inflammatory processes of maxillofacial area and teething problems showed the lowest values of the indicator (5.61 ± 0.08 and 6.13 ± 0.35 days).

The average duration of temporary disability cases for patients with maxillofacial diseases in the Republic of Tatarstan established by us slightly differs from the “Approximate periods of temporary disability in digestive diseases (class XI under ICD-10) in the Russian Federation” (Table 2).

Table 2:«Approximate periods of temporary disability in digestive diseases (class XI under ICD-10) in the Russian Federation»

Code under ICD-10	Name of disease under ICD-10	Features of clinical course, type of treatment, etc.	Approximate periods of temporary disability (in days)
K04.4	Acute periodontitis		3-6
K04.6	Periapical abscess with cavity	Surgery	6-7
K04.8	Radicular cyst	Surgery	5-7
K05.2	Acute pericoronitis	Severe disease	7-10
K05.4	Suppurative periodontitis	Severe disease	10-14
K07.3	Tooth malposition	Surgery	7-10
K07.6	Temporomandibular joint syndrome	Acute disease	7-14
K10.2	Acute purulent periostitis		5-10
K10.3	Jaw alveolitis	Acute	3-5
K11.2	Sialadenitis	Acute	7-10
K11.3	Salivary gland abscess	Surgery	7-10
K11.4	Salivary gland fistula		7-10
K11.5	Sialolithiasis		3-7
K12.0	Aphthous stomatitis	Severe disease	6-7

Further, we studied the structure of temporary disability cases depending on the patient's gender and the period of patient encounter (by months). According to the data obtained, there were no statistically significant differences in the distribution of encounters in case of maxillofacial diseases by gender, depending on the month of the year ($p=0.611$). Regardless of the season, the rate of encounters was higher among women, ranging from 53.1% in November to 60.4% in May. The structure of temporary disability cases by gender and months of the year is compared in Figure 3.

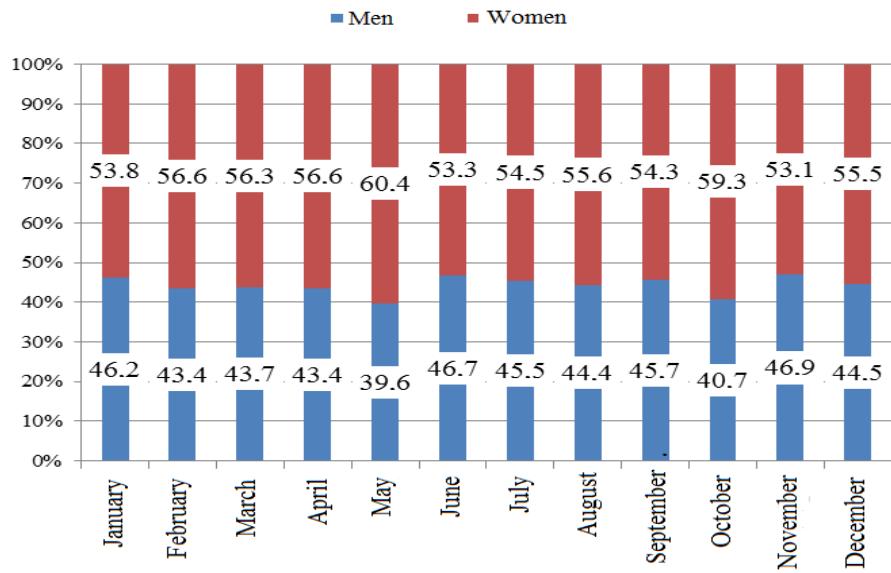


Fig. 3 –Comparison of the distribution of temporary disability cases in maxillofacial diseases by gender, depending on the month of the year

This analysis allowed us to identify the statistically significant differences in the distribution of patients by age groups depending on the month of dental care encounter ($p=0.035$). The seasonal features of the distribution of temporary disability cases in maxillofacial diseases by age groups are presented in Figure 4.

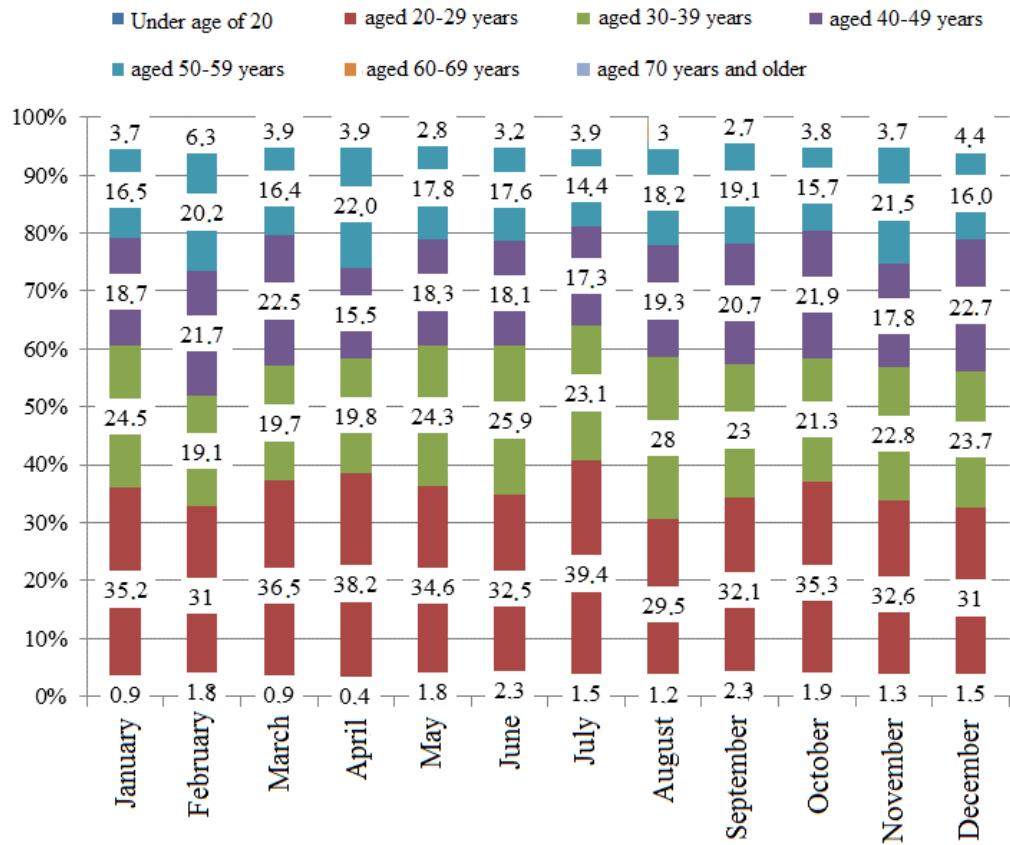


Рис. 4. Comparison of the distribution of temporary disability cases due to maxillofacial diseases by age groups, depending on the months of the year.

Based on the data obtained, the highest rate of temporary disability cases in patients of the younger age group (under the age of 40) was observed in January, as well as in the late spring and the first half of summer: from May to July. The rate of temporary disability cases in maxillofacial diseases in patients aged 40 years and older was higher in February and March, as well as in November and December. For all months of the year, the rate of temporary disability cases in patients aged 20–29 years prevailed, ranging from 29.5% in August to 39.4% in July.

DISCUSSION:

During medical and statistical study of temporary disability cases in patients with maxillofacial diseases, the groups of maxillofacial diseases, resulting in the limitation and/or disability of the adult population: inflammatory (odontogenic and nonodontogenic), traumatic, benign and malignant lesions, secondary edentulism (full or partial), as well as teething diseases, were identified.

As a result of the research, we found that there were no statistically significant differences in the distribution of temporary disability cases due to maxillofacial diseases by gender ($p=0.611$). Regardless of the season, the rate of dental care encounters was higher among women, ranging from 53.1% in November to 60.4% in May.

Regarding the patients' age, on the contrary, we identified statistically significant differences in the distribution of temporary disability cases by age groups depending on the month of dental care encounters ($p=0.035$). The highest rate of temporary disability cases in patients of the younger age group (under the age of 40) was observed in January, as well as in the late spring and the first half of summer: from May to July. The rate of temporary disability cases in maxillofacial diseases in patients aged 40 years and older was higher in February and March, as well as in November and December. For all months of the year, the rate of temporary disability cases in patients aged 20–29 years prevailed, ranging from 29.5% in August to 39.4% in July. Also, in accordance with the data obtained, the duration of temporary disability cases, when the patients with maxillofacial diseases sought dental care in August, differed by the highest values. The shortest cases were registered in December and March.

The average duration of temporary disability, established by us, depending on the nosological group of maxillofacial diseases in the Republic of Tatarstan corresponds to the "Approximate periods of temporary disability in digestive diseases (class XI

under ICD-10) in the Russian Federation" (Table 2).

CONCLUSIONS:

The duration of temporary disability in maxillofacial diseases is the main medical and social indicator that reflects the nature of the disease, the quality of dental care and affects the economic component in the payment of temporary disability benefits. The period of temporary disability of the economically active population of the Republic of Tatarstan with maxillofacial diseases statistically reliably depends on various factors: the nosological group, the period of dental care encounters and the patient's gender, his age, the year of observation.

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"This article does not contain any studies with human participants or animals performed by any of the authors."
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