

## RESEARCH ARTICLE

# Comparative Study Regarding Activity of Emergency Dental Offices in Tirgu Mures and Oradea

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**Objective:** The purpose of the study was to assess the activity of the Emergency Dental Office of UPU SMURD in Tirgu Mures since its establishment and also to compare it with the similar unit from Oradea. **Methods:** The two-year retrospective and comparative study is a statistical processing of non-personal data regarding the emergency dental services in the UPU SMURD Tirgu Mures and UPU SMURD Oradea, involving the data collected in the same period at both emergency dental offices. Data based on the records analysis of the patients who were consulted and treated at the Emergency Dental Office in UPU SMURD Tirgu Mure between February 1, 2012 – February 1, 2014 compared with similar data from Oradea. **Results:** Assessing the number of patients presented each month – first and second year – we can see that since the establishment of the Emergency Dental Office in Tirgu Mure (no=12780), the number of patients showed a linear increase in the first year, and in the second year the constant number of patients present in the studied unit was higher than in the other center from Oradea (no=4886). **Conclusions:** The large number of patients and the nature of the cases that were present in the Emergency Dental Office in the UPU SMURD Tirgu Mure show how necessary the set-up of this unit was.

**Keywords:** UPU SMURD, emergency dental office, retrospective study

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## Introduction

Nowadays, dental medicine has become an increasingly more difficult task to perform, since one has to always be up to date with newly developing treatment procedures. As a result, the investigation of the patient has to be done thoroughly and to be well documented, after which a very complex, multidisciplinary and correct treatment should follow.

When establishing the therapeutic choice in the dental practice, the dentist will have to take two main aspects into account: the magnitude of the dental intervention and potentially associated system pathology and its compensation level, which can allow or prevent safe dental therapy [1].

In the case of patients with medical risks, their assessment and the precautions that need to be taken during treatments are essential. Among risk factors, one can count: the increasing number of elderly patients, an increase in usage and administration of a broad choice of drugs in dental medicine and medicine in general, the patients' stress levels determined by their social and economic conditions, at times very poor, and last, but not least, the lack of sanitary education among the population [2].

Tooth pain, negligence, and fear of interventions are commonly seen among the Romanian population. More often than not, these are the main causes for avoiding and postponing necessary dental treatments, with serious consequences on the teeth state of the individual and the population as a whole [3].

The Emergency Dental Offices within UPU SMURD function according to the Ordinance of the Ministry of Health, Ordinance No. 1706 from October 2, 2007 regarding the administration and organization of units and departments for receiving emergencies [4].

Due to multiple requests, on the 1<sup>st</sup> of February, 2012 the Emergency Dental Office UPU SMURD Tirgu Mureş was founded, functioning permanently.

In Oradea, the Emergency Dental Office UPU SMURD with permanent functioning hours was founded earlier on the 20<sup>th</sup> of December 2009. However, according to our knowledge, no studies were published regarding the activity of these units.

The aims of the present study were to assess the activity of the Emergency Dental Office of UPU SMURD in Tirgu Mureş since its establishment and also to compare it with the similar unit from Oradea.

## Material and methods

The study was approved by the Research Ethics Committee of the University of Medicine and Pharmacy of Tirgu Mureş.

In this retrospective 2-year study we statistically processed and compared the non-personal data from the two centres of Emergency Dental Office UPU SMURD Tirgu Mureş and Oradea.

The methodology of the study was retrospective and descriptive, based on the analysis of the patients' records, who had been examined and treated at the Emergency Dental Office of UPU SMURD Tirgu Mureş and Oradea between February 1, 2012 – February 1, 2014.

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The patients who attended the studied units were registered in the databases of the emergency dental offices and in the examination registry, after having presented their ID card or their birth certificate.

Patients from other sections were transferred in the studied unit from Țirgu Mureș, previously admitted to the County Emergency Hospital with dental problems, at times requiring inter-disciplinary examination in order for the dental emergency procedures to be performed.

The medical examination consisted in an external and internal oral exam with artificial light at the dental unit, with a special examination kit. At these studied units no dental x-rays were performed, so that the emergency diagnosis was based on the internal oral exam and the history of the affection.

According to the diagnosis, the following emergency procedures were performed in the emergency units:

- calming bandage
- direct pulp cap
- (vital/devital) pulp extirpation
- treatment of acute apical periodontitis
- treatment of chronic periodontitis
- treatment of gingivitis and stomatitis
- tooth extraction – periodontal teeth, mobility group 3-4
- removal of infection outbreak
- treatment of postextraction alveolitis
- treatment of postextraction bleeding
- abscess treatment – mucus and periosteal incision

Patients with traumas of affections that do not fall in the competence of the dentists who ensure emergency services in Țirgu Mureș were further guided to the Oro- and Maxillofacial Surgery Clinic and those for whom the treatment needed continuance to Walk-in Clinic for adults and children, functioning within the County Emergency Hospital from Țirgu Mureș according to the agreements signed between the three centres.

The non-personal data has been taken from the examination registries and the databases of the practices and were classified according to age (adult/child), place of origin (urban/rural), sex (male/female). The objective of this study were to determine the prevalence and the characteristics of dental problems for which emergency interventions were requested by the subjects, by means of including differences of age and sex, as well as correlating the urban and the rural, the months of the year and the two studied years.

The obtained data were introduced in Microsoft Excel Sheets, and the statistical analyses were carried out with the IBM SPSS Statistic Data Editor 16 software.

For the statistical analyses the Student-test, ANOVA and the Pearson Correlation were used, with a confidence interval of 95%. The *p* values lower than 0.05 were considered significant from a statistical point of view [5].

## Results

During two years from its establishment in Țirgu Mureș, 12780 patients attended for treatment to the Emergency Dental Office in Țirgu Mureș. In the first year there were 5567 patients, whereas in the second year their number was 7213. The patients' number increased significantly ( $p < 0.05$ ) from one month to the next. The highest values were observed in December due to the winter holidays, as well as in the spring around Easter holidays, when other dental practices were closed in Țirgu Mureș. Analysing the gathered data, it was observed that the number of patients who requested an emergency intervention ranged between a minimum of 150 persons and a maximum of 728 per month. Throughout the two studied years, the average of patients who came by per day was 18. The maximum number of examined and treated patients in 24 hours was 46 patients, on December 29, 2013.

In two years, 2305 children and 10244 adults built up the patient sample. Regarding their place of origin, 6056 patients came from the urban area and 6773 from the rural one. The majority of the patients were female, 7944, while 4934 were male.

In the Emergency Dental Office from Oradea there were 4886 patients in the course of the two studied years. In the first year there were 2714 patients, whereas in the second year there were 2364. The total number of patients was comprised of 1051 children, 3835 adults, out of which 3100 were from the urban area, while 1786 came from the rural side. From the total number of recorded patients 2073 were male and 1772 female (Figure 1).

## Discussions

The great number of patients (12780 and 4886, respectively) who resorted to the emergence units from the 2-year study proves the usefulness of these services.

Patient number distribution in Țirgu Mureș:

- Regarding the age, the percentage of adults was significantly higher 82% ( $p < 0,05$ ) than the childrens' 18% ( $p < 0.05$ ).
- Concerning the place of origin, in the first year the number of patients from the rural area was considerably higher than those from the urban area, whereas in the second year there were months when the situation changed. During the two years of study, according to the place of origin, the distribution showed 53% in the rural area and 47% in the urban one. A difference of 6%, with more patients from the rural area, can be attributed to the fact that in some villages there were no daily dental services, or they were non-existent altogether.
- The gender difference showed a prevalence of 62% female patients, as opposed to only 38% male patients during the two years of activity of the dental emergency service.

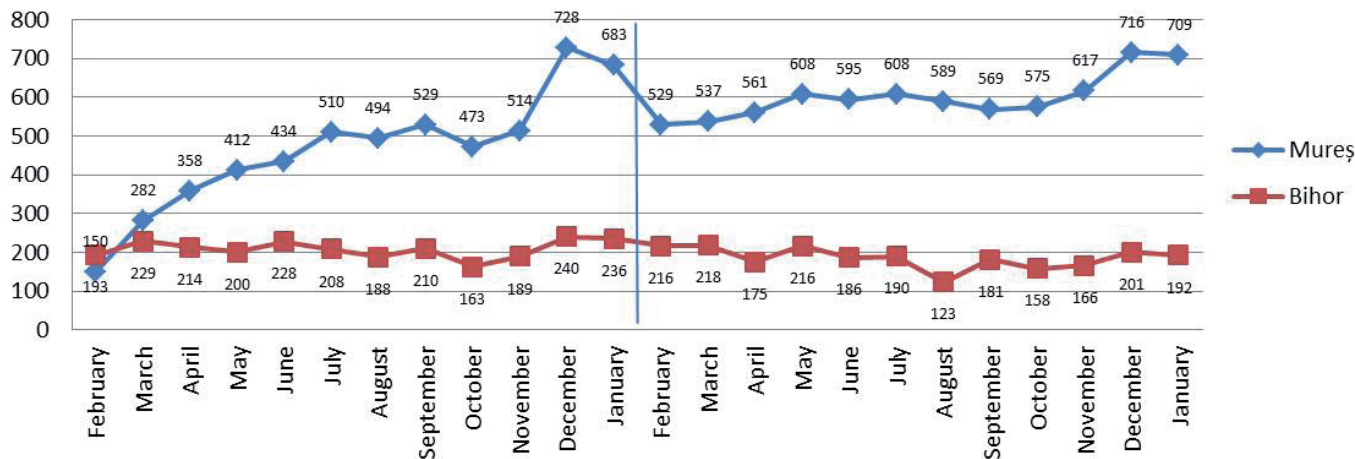


Fig. 1. Data comparison regarding the activity of the two Dental Emergency Offices between February 1, 2012 – February 1, 2014

Patient number distribution in Oradea:

- Concerning the age group, there were significantly more adults 78% than children 22%.
- Depending on the place of origin, 37% of the patients came from the rural area, whereas 63% were from the urban side.
- According to gender the difference was lower: 46% female and 54% male patients (Table I).

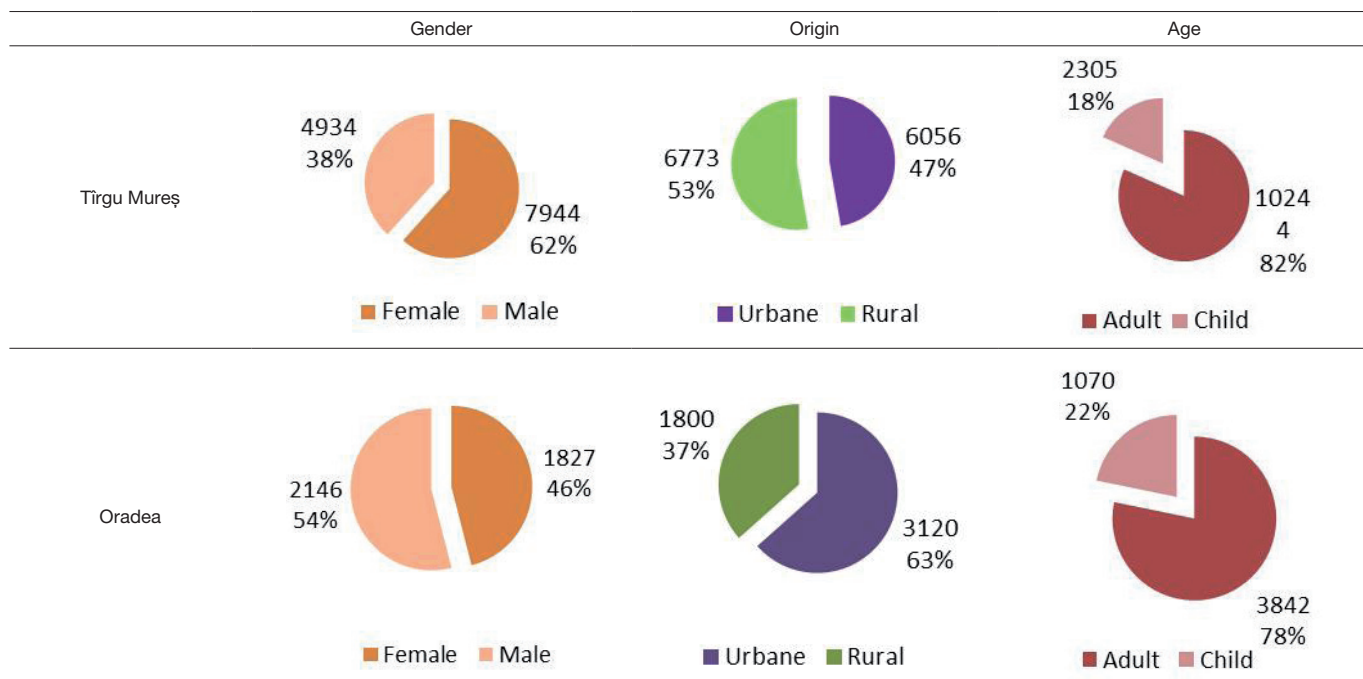
Comparing the gathered data (gender and origin) from the centres in Tîrgu Mureş and Oradea there were significant statistical differences in both groups. As a result, the average number of female patients in the Emergency Dental Office of Tîrgu Mureş throughout two years was 238 (62%) and 78 (44%) in the similar unit of Oradea respectively. As with regards to the male patients in Tîrgu Mureş, the mean values were 233 (38%) and 85 (56%) in Oradea, respectively. The mean values referring to the place of ori-

gin, in Tîrgu Mureş the prevalence of patients was higher from the rural area 255 (53%) whereas in Oradea it was 74 (37%). In Oradea the mean value was relatively higher from the urban area 133 (63%), while in Tîrgu Mureş it was 208 (53%) (Table 2).

It is important to note that we did not notice any significant difference between the distribution of age in the studied centers, meaning the number of adult patients were higher in both center: 375 (82%) in Tîrgu Mureş and 164 (78%) in Oradea (Table II).

Analysing the number of patients per month in the first and second year, one can observe that from the establishment of the Emergency Dental Office in Tîrgu Mureş the number of patients showed a linear growth in the first year, whereas in the second year the growth was constant with respect to the patients from the Oradea unit (Figure 1).

Table I. The data evaluated with respect to gender (male/female), age (adult/child) and origin (rural/urbane).



**Table II. Group statistic of data obtained in Tîrgu Mureş and Oradea, respectively.**

		N	Mean	Std. Deviation	Std. Error Mean
Urban	Tîrgu Mures	12	208.58	78.44	22.64
	Oradea	12	133.75	28.67	8.27
Rural	Tîrgu Mures	12	255.08	85.79	24.76
	Oradea	12	74.42	25.33	7.31
Female	Tîrgu Mures	12	238.67	85.83	24.77
	Oradea	12	78.58	8.50	2.45
Male	Tîrgu Mures	12	233.42	84.14	24.29
	Oradea	12	85.67	12.72	3.67
Child	Tîrgu Mures	12	68.92	29.40	8.48
	Oradea	12	43.92	8.69	2.50
Adult	Tîrgu Mures	12	375.75	130.64	37.71
	Oradea	12	164.25	16.04	4.63

Similar studies were conducted to evaluate the activity of dental emergency departments. In Baltimore, a 4-year longitudinal study revealed a total of 3639 individuals, with a gender distribution as follows: 73% female, 27% male [6]. These data suggest a higher prevalence of female patients. Comparable results were found in a study conducted in New Hampshire, during 2001-2007. The number of emergency department visits for non-traumatic dental conditions increased significantly, just as in our studied offices [7].

In several studies various economic barriers have been described, including the lack of insurance coverage or unwillingness to wait for care, [8] but these social cases do not have other option than to seek the emergency dental offices, lacking the community based dental services.

## Conclusions

Emergency oral intervention is needed where there is an acute request for morphological and functional restoration of teeth.

The great number of patients and the nature of the cases treated at the within Emergency Dental Office UPU SMURD Tîrgu Mureş showed the necessity for the foundation of this unit.

The number of patients requesting the services of this unit in Tîrgu Mureş increased significantly ( $p < 0.05$ ) comparing the two studied years.

The Emergency Dental Office in Tîrgu Mureş was the first service that the patients from the rural area resorted to, since there were no daily dental assistance there, while in Oradea a greater number of patients came from the urban area.

In the practices with a 24 hour schedule and free emergency treatment services, there were social cases as well, given that there are no community based dental services neither in Tîrgu Mureş, nor in Oradea.

The comparative study regarding the assessment of the activity of Emergency Dental Office within UPU SMURD in the cities of Tîrgu Mureş and Oradea showed that the number of patients requesting emergency interventions was significantly higher in Tîrgu Mureş.

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