

# CLINICAL AND EPIDEMIOLOGICAL STUDY REGARDING PATIENTS WITH CRANIO-MAXILLOFACIAL TRAUMA FROM SIBIU COUNTY CLINICAL EMERGENCY HOSPITAL BETWEEN 2014-2017

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**Abstract:** The cranio-maxillofacial region encompasses the soft and hard tissues that form the face from the upper neurocranial bones to the inferior mandible. The face, being the most exposed part of the human body, is frequently subjected to cranio-maxillofacial trauma. Cranio-maxillofacial trauma may cause lesions of soft tissues, bone substrate and dental arches. Cranio-maxillofacial trauma registers an increase, both in terms of their number and complexity, possibly due to the fact that the number of motor vehicles is rising year after year, to the modest infrastructure existing in our country, to the increase of interpersonal violence and the increase of socio-economic activities of the population.(1-2)

## INTRODUCTION

Every year, more than 1 million people die and more than 25 million people are injured or remain disabled as a result of road accidents.(3) The first cause of maxillofacial fractures in the world is represented by car accidents and interpersonal violence. Other causes of maxillofacial trauma include accidental falls, kicks given by animals, work accidents, or sports injuries.(4) Oromaxillofacial traumatism are multiple and their magnitude is different. Maxillofacial trauma is one of the major challenges for public health and health services, occupying the first place in oromaxillofacial surgery.(5)

Due to their severity and complexity, these lesions are often associated with high morbidity, loss of function, and a high aesthetic, social and economic cost, with an impact on quality of life.(6)

## AIM

This article aims to make a 4-year retrospective study regarding the traumatism in the oromaxillofacial field including the patients hospitalized within Sibiu County Clinical Emergency Hospital between 2014 and 2017, following the etiology, distribution of patients by gender, urban and rural areas, frequency, the most frequent complications, as well as the performance indicators of the oromaxillofacial surgery department within Sibiu County Clinical Emergency Hospital.

## MATERIALS AND METHODS

This article was based on data obtained from the statistical service of the County Clinical Emergency Hospital of Sibiu and includes a 4-year statistics, between 2014-2017, of patients admitted to Sibiu County Clinical Emergency Hospital with maxillofacial trauma and the performance indicators of the oromaxillofacial surgery department.

Data on aetiology, distribution by sex, urban and rural areas, data on the rate of complications and frequency were subsequently systematized.

## RESULTS

This study included a total of 1240 patients admitted

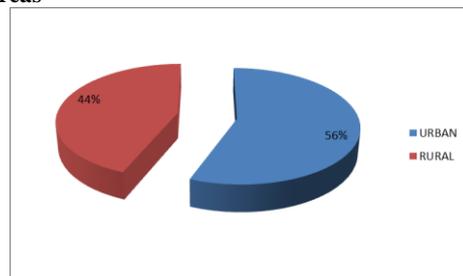
to Sibiu County Clinical Emergency Hospital with a diagnosis of craniofacial trauma.

Regarding the patients' distribution by urban and rural areas, the study revealed a slightly increased percentage of urban patients (56.05%), compared to rural areas (43.95%) and in terms of patients' distribution by sex, there was a higher ratio in favour of male patients (F: 236, B: 1004) (table no. 1, figures no. 1, 2).

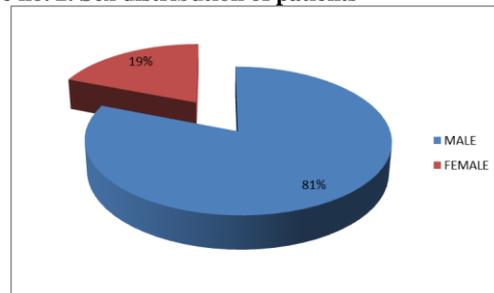
**Table no. 1. Distribution of patients by sex, urban and rural areas**

	URBAN	RURAL	MALE	FEMALE
<b>Number</b>	695	545	1004	236
<b>Percentage</b>	56,05%	43,95%	80,97%	19,03%

**Figure no. 1. Patients' distribution according to urban and rural areas**



**Figure no. 2. Sex distribution of patients**



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The high percentage of both male and female patients in urban area compared with rural area shows a predisposition in this environment for cranio-maxillofacial traumas, most likely due to an agitated lifestyle, to more numerous and more diversified socio-professional activities. According to these percentages, rural people are more protected from this kind of trauma.

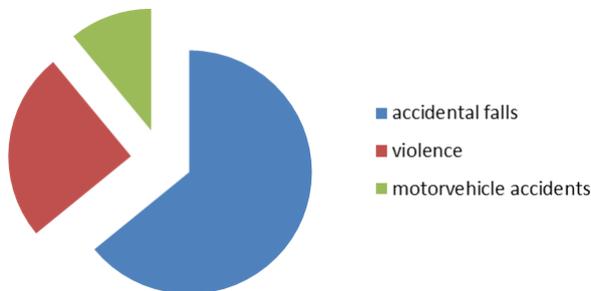
A breakdown of patients was performed on 3 age groups, patients aged less than 20 years, patients aged 20-40 years, patients over 40 years, and a higher percentage of patients in the age group 20-40 years (58.15%) was observed. This is probably due to the fact that patients in this age group are involved in many activities in social life and are more prone to these pathologies (table no. 2).

**Table no. 2. Distribution of patients on groups of age**

<20 years	20-40 years	>40 years
7,66%	58,15%	34,19%

From the point of view of etiology, there was a higher frequency of trauma caused by accidental falls, possibly due to agitated daily life, followed by aggressions, interpersonal violence in our society being increasing, the third being car accidents, possibly due to the fact that the number of vehicles is increasing and we still benefit from a modest infrastructure (figure no. 3).

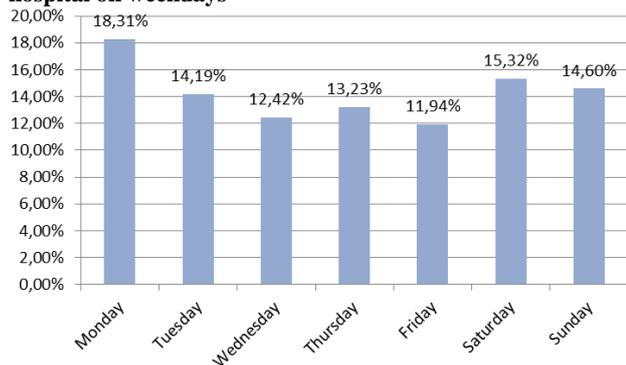
**Figure no. 3. Cranio-maxillofacial trauma etiology**



In this study, the weight on the days of the week was calculated regarding the presentation of the patients at the Sibiu County Clinical Emergency Hospital with a high percentage on Mondays, due to the likely delay of their presentation to the hospital in case of traumas produced during the weekend.

The lowest percentage (11.94%) was registered on Fridays as a result of postponing their presentation to the hospital, hoping that the traumas suffered do not require specialized treatment (figure no. 4).

**Figure no. 4. Percentage of patients' presentation to the hospital on weekdays**



From this study, a greater number of patients with oromaxillofacial trauma were observed in the third trimester of the year, possibly due to the fact that during the summer season

people perform several activities that predispose them to trauma (table no. 3).

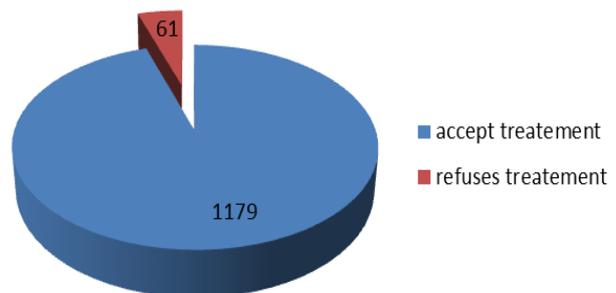
**Table no. 3. Distribution of maxillofacial trauma patients on trimesters**

TRIM I	TRIM II	TRIM III	TRIM IV
285	300	361	294

Of the total patients included in this study (1240), 1179 patients (95.08%) accepted the treatment, while a very small percentage, 61 patients (4.92%) refused the treatment.

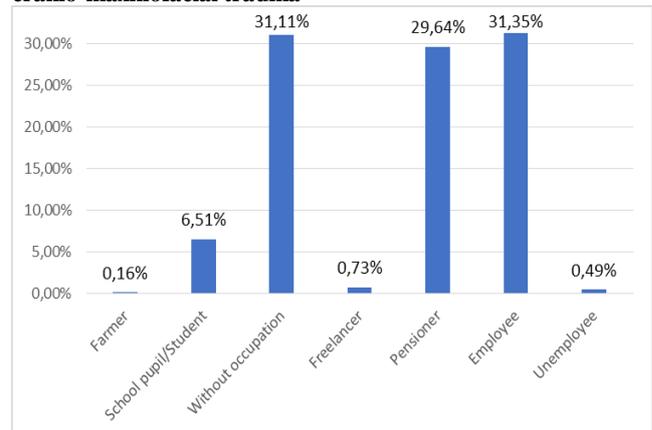
This shows, however, the degree of responsibility and awareness of patients when they are referred to surgical treatment for the traumatic pathology suffered (figure no. 5).

**Figure no. 5. Distribution of patients regarding the acceptance or refusal of treatment**



This study also analyzed the occupation of patients who suffered cranio-maxillofacial trauma and a high percentage of non-occupational patients, pensioners and employees was observed. Employed people who have an active working life are more prone to these types of trauma (figure no. 6).

**Figure no. 6. Occupation of patients who have suffered cranio-maxillofacial trauma**



The most common symptoms of patients diagnosed with cranio-maxillofacial trauma were acute pain and difficulty in eating, symptoms found in 524 of 1250 patients, accounting for 42.26% of all hospitalized patients.

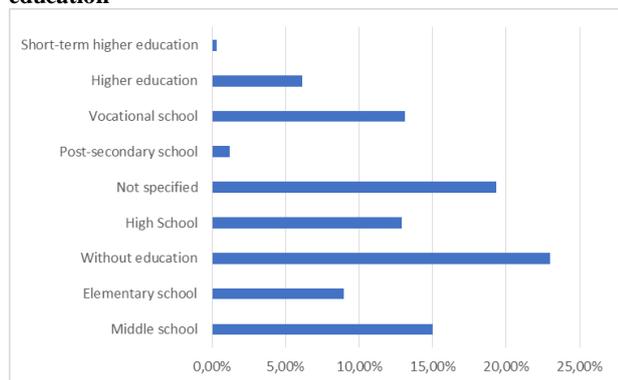
The level of study of patients with cranio-maxillofacial trauma was also analyzed revealing a high percentage of patients without education, indicating their predisposition for maxillofacial facial trauma due to the low level of education.

People with higher education represent a much lower percentage involved in these types of trauma, possibly due to the fact that they avoid one of the main causes of such injuries, namely, interpersonal aggression (figure no. 7).

The present study also aims at presenting the

performance indicators of the Oral and Maxillofacial Surgery Department within Sibiu County Clinical Emergency Hospital, the data being provided by the statistical office of the hospital.

**Figure no. 7. Patients' distribution according to their level of education**



The average length of hospitalization over the 4 years has been analyzed, and it was noticed that this was lower in 2015 (3.84 days). In the next years, this had an increasing trend possibly due to the complexity of the cases and possibly due to the associated affections of the treated patients, which were also increasing (table no. 4).

**Table no. 4. The average length of hospitalization in oromaxillofacial department**

2014	2015	2016	2017
4,45	3,84	4,46	4,68

A presentation of the overall mortality rate was also made taking into account every year of the study, noticing a very low percentage of the overall mortality rate over the years, a slight increase being registered in 2017 (1.14%) (table no. 5).

**Table no. 5. The rate of mortality in the oromaxillofacial department**

2014	2015	2016	2017
0,59%	0,70%	0,31%	1,14%

The percentage of patients who underwent surgical procedures of the total discharged patients was also analyzed, from the first year of the study to the last, with an increasing trend, which highlights the need for surgical treatment for this pathology (table no. 6).

**Table no. 6. Percentage of patients who suffered surgical procedures**

2014	2015	2016	2017
89,44%	93,71%	93,88%	97,35%

### DISCUSSIONS

Cranio-maxillofacial traumatisms represent a very frequent pathology nowadays, as a result of an alert lifestyle, development of society, the increasing trend of interpersonal violence. They also represent one of the main pathologies of oral and maxillofacial surgery.

These have a major impact on the quality of life of the patients and if untreated, they can lead to a number of physiological, functional and psychological complications and many of them can endanger the life of the individual.

In this study, it was shown that out of the total number of patients admitted to Sibiu County Clinical Emergency Hospital (1240) with the diagnosis of craniofacial trauma, the majority were males (1004), which indicates a more active involvement and a greater variety of professional activities

which predispose them to this pathology. Also, the urban environment (56.05%) represents a higher share in the production of these traumas, probably as a result of a more agitated daily life compared to the rural environment (43.95%).

This study also reveals that young people aged 20-40 years are more prone to cranio-maxillofacial. In the etiology of cranio-maxillofacial trauma, the first factor in this study is represented by accidental falls, followed by interpersonal aggression, while the motor vehicle accidents occupying the third place.

The performance indices of the oral and maxillofacial surgery compartment presented in this study show an average length of stay comparable to the rest of the same profile wards in the country, a very low mortality index and an increasing trend of annual surgical interventions in all discharged patients, which also represents an increase in the complexity of cases of craniofacial trauma.

### CONCLUSIONS

As a result of this study we concluded that out of 1240 patients admitted to Sibiu County Clinical Emergency Hospital with the diagnosis of craniofacial trauma, 1004 patients were males and a slightly higher percentage of urban patients (56.05%), compared to rural areas (43.95%).

The first three causes of these traumas, according to this study, were in decreasing order: accidental falls, aggressions and motor vehicle accidents.

Also, according to this study, the people aged 20-40 years old are more prone to these types of trauma.

From the analysis of the performance indices performed at the level of the oral and maxillofacial surgery department within the County Clinical Emergency Hospital of Sibiu, we can say that there is an increase in the complexity of these cases.

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