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Research Article

**STUDY TO KNOW THE MANDIBULAR FRACTURES  
PATTERN AND ITS ETIOLOGY**<sup>1</sup>Dr. Hira Khalid, <sup>2</sup>Dr. Asma Bibi, <sup>3</sup>Dr. Zara Khan<sup>1</sup>De'Montmorency College of Dentistry, Lahore<sup>2</sup>Women Medical & Dental College, Abbottabad<sup>3</sup>Rural Health Centre Khalaspur, Jhelum**Abstract:**

**Objective:** The purpose of this analysis was to analyze and evaluate the mandible fracture pattern in 150 patients treated in the Department of Oral and Maxillofacial Surgery.

**Study Design:** A descriptive study.

**Location and Duration:** In the Oral and Maxillofacial Surgery department of Mayo Hospital, Lahore for one year duration from November 2016 to November 2017.

**Methods:** These patients were evaluated radiologically and clinically to detect mandibular fractures. Gender, age and fracture data were reviewed and evaluated. The 2 to 78 years of age was the means age (mean 25 years) and in the age group 21 to 30 years. The male to female ratio was 3.99: 1.

**Results:** The mandible fractures main cause was the traffic accidents [RTA (n = 65, 41.96%)], (n = 42, 28%), followed by the bullet wound [FAI 25; 16.6%], fights (s = 8, 4.7%, sports (n = 6, 3.4%), accidents while doing work (n = 4, 3%) and 4 cases are because of other bomb explosions and injuries by animals. = 40, 23.3%) and body (n = 38, 22.2%), followed by parasympathetic (n = 47, 27.4%).

**Conclusion:** This study may helps to develop policies and strategies to treat and prevent mandible fractures.

**Key Words:** Traffic accidents, mandibular fractures, seat belts, etiology.

**Corresponding author:****Dr. Hira Khalid,**

De'Montmorency College of Dentistry,

Lahore

QR code



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**INTRODUCTION:**

The mandible is the only moving bone of the tooth skeleton that plays a major role in chewing, speaking and swallowing. In the facial skeleton, It is a distinct bone which is more often broken between maxillofacial injuries. Rupture causes severe function and loss of deformity. The mandible fracture may be simple or may be included with other fractures of the facial bones. The relationship between mandible and zygomatic and maxillary fractures in maxillofacial injuries is 8: 5: 2. The site of fracture depends on the mechanism of injury, the direction and size of the impact force and the anatomy of the mandible and the region. The facial bones are weak to bear impact forces. Compression resistance is higher, but tends to break when stress is present. It is also more sensitive to side effects such as body and branch. The common causes of mandibular fractures are interpersonal violence, traffic accidents, falls, bullet wounds, industrial accidents and sports injuries. These causes depend on the geographical status, cultural characteristics and socioeconomic status of the population. In third world countries, the main causes of mandibular fracture are Traffic accidents and in developed countries interpersonal violence is the main cause. Traffic accidents and the decrease of young population are the most common causal factors in adults. Age and gender were important factors affecting the appearance of mandibular fractures. The major of frequency was observed in the 21-30 age group. In the age group above 60 years of age, incidence is low and also in younger than 6 years. The latest data shows the 4: 2 ratio between men and women worldwide. The most area which is fractured is the angle followed by the paraphysis and

body. Mandibular body is the most common fracture in adults, whereas condyle is predominant in small children. The aim of this analysis is to know the epidemiological characteristics of the mandible fractures, as the cause of the mandible fracture is a direct reflection of the level of public education and social state of the society. This analysis also emphasizes the precautions to be taken to prevent mandible fractures.

**MATERIALS AND METHODS:**

This descriptive study was performed in the Oral and Maxillofacial Surgery department of Mayo Hospital, Lahore for one year duration from November 2016 to November 2017.

A detailed history of 150 patients was performed with the consent of the patients and a complete clinical examination was performed. The standard radiography was completed with the orthopantomogram (OPG) and, if necessary, the posteroanterior (AP) image of the face or face. A definitive diagnosis of mandibular fractures was made on the basis of clinical examination, imaging studies and clinical history. Study data were obtained in preformed forms and analyzed and evaluated by applying descriptive statistics.

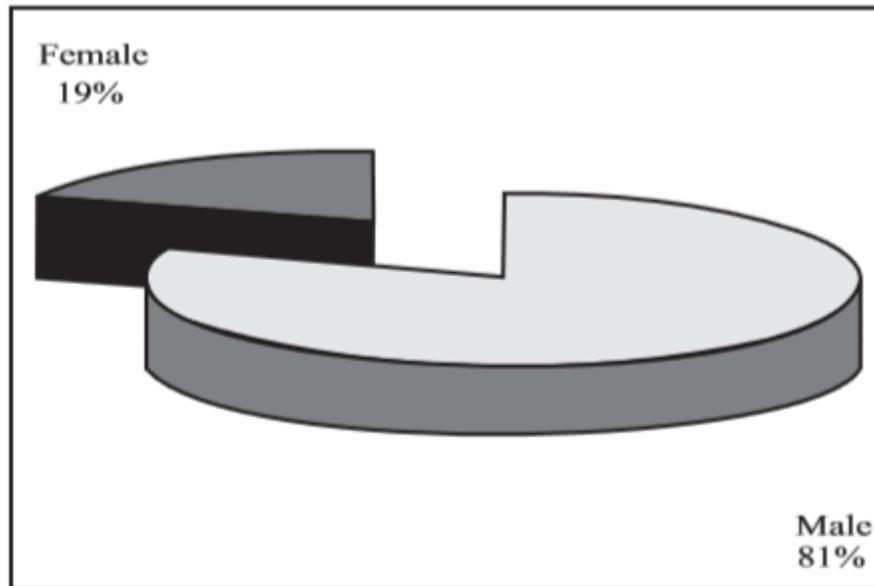
**RESULTS:**

$25.02 \pm 16.25$  years was the mean age of the patients. In majority of cases, the age range was 22-31 ( $n = 44$ , 29.06%). Only 14.93% of the patients were younger than 10 years and 1.3% were above 60 years (Table 1).

**TABLE 1: AGE DISTRIBUTION OF MANDIBULAR FRACTURES**

<b>Age groups (years)</b>	<b>No. of patients</b>	<b>%age</b>
1-10	23	15.3
11-20	35	23.3
21-30	43	28.6
31-40	25	16.6
41-50	15	10
51-60	7	4.6
Over 60 years	2	1.3
<b>Total</b>	<b>150</b>	<b>100</b>

The proportion of males and females (n = 121, 81%) (n = 29, 19%) according to gender distribution was 3.99: 1 (Figure 1).



**Fig 1: Gender Distribution of Mandibular Fractures**

The mandibular fractures most common etiology was road traffic accidents (n = 65, 41.96%) and accidental fall (n = 43, 29%) while the industrial accidents were minimum (n = 4; 3%) (Table 2).

**TABLE 2: DISTRIBUTION OF MANDIBULAR FRACTURES ACCORDING TO ETIOLOGY**

<b>Etiology</b>	<b>No. of patients</b>	<b>%age</b>
RTA	64	42.6
Fall	42	28
FAI	25	16.6
Assault	7	4.6
Sport	5	3.3
Industrial	3	2
Other causes	4	2.6
<b>Total</b>	<b>150</b>	<b>100.0</b>

172 total fractures among 151 patients in different regions. The parapsysis was most common location of mandibular fractures (n = 48, 28.04%), followed by angle (n = 41, 22.93%) and body (n = 39, 21.92%). Table 3).

**TABLE 3: DISTRIBUTION OF MANDIBULAR FRACTURES ACCORDING TO SITE**

<b>Site</b>	<b>No. of fractures</b>	<b>%age</b>
Symphysis	19	11.1
Parasymphysis	47	27.4
Body	38	22.2
Angle	40	23.3
Ramus	4	2.3
Condyle	22	12.8
Coronoid	1	0.5
<b>Total</b>	<b>171</b>	<b>100.0</b>

#### **DISCUSSION:**

The results of the epidemiological study on the mandibular fractures incidence showed a tendency for the dominant group to vary according to the socioeconomic status, geographical region, cultural characteristics and age of the study. Contrary to the reports of the SM Karyouti study. A possible explanation of the 21-year frequency of fractures in the 30-year age group is the second and third years of people's life in those years, making it the most active

and traumatic for many years. These age groups show a lot of sports activity, fighting, violence and fast transportation. Older people in developing countries are dependent on young people economically to live. The low frequencies of young and old groups depend on the low activity of these age groups. After the seat belt legislation in these countries, there is a significant reduction in mandibular fractures caused by RTA. In our country, high rates of mandibular fractures connected to RTA require seat belts, speed,

overload, children under age and inadequate road and vehicle conditions. The amount of firearms recorded in this study depends on tribal debates and lifestyles on the northwestern border of Pakistan, where weapons are part of cultural life. The rate of jaw fracture in men and women (4.1: 1) is mostly seen in men in this region. This finding is consistent with the results of previous studies in the world. The relatively high number of women comes from the fact that men are more active in foreign activities and women are limited to closed activities. The report on traffic accidents, according to previous epidemiological studies, followed the decline as the main cause of mandibular fractures in developing countries. However, they are the etiological factors of aggressive and interpersonal violence in developed countries. This trend of change in the etiology of Western countries varies depending on the abuse of alcohol and illegal drug use in these societies.

#### CONCLUSION:

The conclusion of this analysis shows that most of the patients are young males. The most common cause of mandibular fracture was road traffic accident with the most common paraphysis, followed by a decrease. In this analysis, the following instructions are given;

- 1 Safety regulations, such as speed limits, traffic regulations and seat belts must be strictly observed to reduce the incidence of traffic accidents.
- 2 An awareness-raising campaign should be initiated to aware the public, especially about the values of restrictions on drivers, motor vehicles and preventive measures.
- 3 Parental Education in children will decrease the injuries incidence among the pediatric population.

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