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# **Original Research**

# Evaluation of pattern of maxillofacial fractures in Kashmiri population

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#### ABSTRACT:

**Background:** To evaluate the pattern of maxillofacial fractures in the population. **Materials & methods:** A total of 200 subjects were enrolled. The age group was 18 to 65 years. Fractures were assessed according to location that is exclusively lower third, middle third and combination of both middle third and lower third. Results were analysed using SPSS software. **Results:** The location of fractures was distributed and divided as middle third, lower third and both. Middle third fracture was most commonly seen. The percent of individuals with lower third fractures were 25% and middle+ lower third were 10%. **Conclusion:** Mandibular fractures remain the most frequent fractures.

Keywords: maxillofacial, fractures, mandible.

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## **INTRODUCTION**

Indians with injuries are reported to be six times more at risk of death as compared with their counterparts from developed countries. <sup>1</sup>Therefore, maxillofacial injury management requires adequate patient documentation, injury surveillance, and re-creation of data that adequately describe the whole spectrum of injuries.<sup>2</sup> This would enable health planners and providers to specifically address the burden of maxillofacial injuries, and thus develop suitable preventive programs aimed at lowering the incidence of these through more efficient planning for resource allocation and delivering adequate care. 3-5 The etiology of facial trauma also affects the incidence, clinical presentation, and treatment modalities of the facial fracture, and it is influenced by sociodemographic, economic, and cultural factors of the population being studied.<sup>4</sup>

Trauma of the maxillofacial region is one of the most important health hazards across the world. Maxillofacial (MF) fractures lead to severe morbidity, cosmetic disfigurement as well as problems in oral functioning. <sup>6</sup>The pattern of maxillofacial trauma in north India is not well understood. Observing maxillofacial trauma helps to assess the behavioral pattern of people in various regions worldwide and helps to provide effective means through which injuries can be prevented.<sup>7</sup> There are variations in facial fractures due to differences in the severity and mode of injury.<sup>8</sup>Mandible was seen as the most predominantly fractured bone in multiple studies. Careful inspection, palpation, and examination of function assure accurate diagnosis of the injuries. Management of MF trauma has developed in an evolutionary manner. Evaluation of injuries of soft tissue and bone must be precise through instrumental diagnostic examinations. Coordinated, periodic, and sequential collection of data concerning demographic patterns of MF injuries may assist health care officials assess address the causes and evaluate effectiveness of previously implemented preventive protocols. Consequently, an understanding of the etiology, severity, temporal distribution, and prevalence of MF trauma may dictate priorities to be implemented on the basis of the findings.9 Hence, this study was conducted to evaluate the pattern of maxillofacial fractures in the population.

#### **MATERIALS & METHODS**

A total of 200 subjects were enrolled. The age group was 18 to 65 years. Fractures were assessed according to location that is exclusively lower third, middle third and combination of both middle third and lower third. Sites of mid-facial fractures were classified as maxilla, zygoma, isolated zygomatic arch, orbital floor, nasal and mandible. The data was collected and site of fractures were assessed for statistical significance using Chi square test. Results were analysed using SPSS software.

#### RESULTS

A total of 200 subjects were enrolled. The location of fractures was distributed and divided as middle third, lower third and both. Middle third fracture was most commonly seen. The percent of individuals with lower third fractures were 25% and middle+ lower third were 10%.

 Table 1: Distribution of patients according to location of maxillofacial fractures

Location	Number of	Percentage
	subjects	
Lower third	50	25
Middle third	130	65
Middle + lower	20	10
third		

According to anatomical site, mandible fractures were most prevalent as 602 in number followed closely by maxilla with n = 55, nasal with n = 43 and zygoma with n = 36.

 Table 2: Distribution of patients according to anatomical fracture site

Site	Number of patients	
Mandible	60	
Maxilla	55	
Zygoma	36	
Zygomatic arch	26	
Orbital floor	12	
Nasal	43	

## DISCUSSION

Maxillofacial (MF) injuries constitute one of the major health problems worldwide. These injuries remain as a serious clinical problem because of the sensitivity of this anatomical region.<sup>10</sup> Although these injuries are common worldwide, their incidence and pattern are of major concern since it is linked with several factors including social, cultural, and environmental factors and, therefore, varies with population. 9,10 The majority of the published studies showed MF injuries are common in the age range of 21-30 years.<sup>10,11</sup> Most of the available literature on MF fractures also revealed that MVC was the most common cause. 10,12 While some of the studies showed mandible fractures as the most common type of MF fractures. <sup>13</sup> Hence, this study was conducted to evaluate the pattern of maxillofacial fractures in the population.

In the present study, a total of 200 subjects were enrolled. The location of fractures was distributed and divided as middle third, lower third and both. Middle third fracture was most commonly seen. The percent of individuals with lower third fractures were 25% and middle+ lower third were 10%. A study by Agarwal P et al, studied the demographics, etiology, geographic distribution, date of injury, site and number of fractures, and type of intervention were recorded for each. The population consisted of 1,000 patients with 1,543 fractures. The male: female ratio was 8:1. A peak incidence of fractures was seen in the third decade (mean age: 30.3) with maximum patients younger than 40 years (80.8%). The incidence of fractures was highest in spring (42.9%). Road traffic accidents were the most common cause of trauma (64.4%) and mainly involved two wheelers (60.2%). Single-site fractures were most common. Mostly zygomatic (45.1%) and mandibular fractures (44.4%) were encountered, accounting for approximately 90% of all fractures. The main site of mandibular fractures was the body (34.4%); 46.2% of fractures underwent open reduction and internal fixation (ORIF) while 53.8% were treated by closed methods. The trend of most traffic-related injuries continues with the increasing traffic on roads. Zygomatic complex and mandibular fractures remain the most frequent.14

In the present study, according to anatomical site, mandible fractures were most prevalent as 602 in number followed closely by maxilla with n = 55, nasal with n = 43 and zygoma with n = 36. Another study by Pandey S et al, studied one year cross-sectional study and 1,108 patients with maxillofacial fractures were analysed. Out of 1,108 patients, 89.62 % were males with a male: female ratio of 8.63:1. The 21-30year age group was found to be maximum (39.98 %). Road traffic accidents accounted for 49.01 %, followed by assault (22.38 %) and fall from height (21.66 %). Two wheelers were the most commonly involved vehicle. Out of 437 road traffic accident patients (excluding pedestrian, n = 106), only 52.40 % were found to be using restraints devices at the time of accident. Totally 25.45 % patients were under the influence of alcohol at the time of injury. According to anatomical distribution of fractures, mandibular fractures (33.57 %) were most prevalent, followed by maxilla (31.13 %), nasal (28.33 %) and zygoma (24.36 %). Head injuries (18.32 %) were found to be the most common associated injuries followed by lower limb fractures.<sup>15</sup>Evidence suggests that etiology, incidence and patterns of MF and associated with geographic location injuries vary and socioeconomic status of a population.<sup>16</sup> Therefore, epidemiological data are central and should be taken into account while developing strategies to improve healthcare in a given population. <sup>17</sup>

#### CONCLUSION

Mandibular fractures remain the most frequent fractures.

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