



## Type of Facial Fractures in two Wheeler Riders with or Without Helmet: A Prospective Study

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Received: 07 June 2021  
Revised: 03 August 2021  
Accepted: 15 August 2021  
Published: 22 October 2021

### Abstract

**Background:** Road traffic injuries have come to be epidemics in present day society. Motorbike injuries constitute more or less 50 % of all traffic accidents. **AIM:** The main purpose of this study was to evaluate the helmets used and in relation to the type of facial injuries in a Kashmiri population of two wheeler accidents. **Methods:** This study was conducted in the department of Oral and Maxillofacial Surgery, from 1st July 2020 to 20th March 2021. The study comprised patients of all ages and both sexes admitted in the Oral and Maxillofacial region due to two wheeler accidents. Total of 236 patients were included in this study. **Results:** Most common age group affected was 17–35 years (80 %) and the mean age of the victims was 24.42 years. Male to female ratio was 11:1, 66 patients (28%) were below 18 years of age hence not allowed to ride as per traffic norms. 0 patients who were wearing a helmet at the time of accident had an ISI mark on their helmets i.e.: helmets were not up to the mark. **Conclusions:** Our Study revealed common age group affected was 17–35 years (80 %) and the mean age of the victims was 24.42 years. The percentage of riders wearing was extremely low as low as 6%. The younger generation of our country need to be made aware of traffic rules and regulations, they should be made aware regarding safe riding measures particularly regarding use of helmet during two wheeler driving.

**Keywords:-** Facial Fractures, Dentistry.

### INTRODUCTION

Road traffic injuries have come to be epidemics in present day society.<sup>[1]</sup> Motorbike injuries constitute more or less 50 % of all traffic accidents.<sup>[2]</sup> Motorcycle riding require a high degree of coordination, immaculate judgment, and experience for safe operation. Motorcyclists are mostly unprotected and

vulnerable to high-impact collisions. Facial trauma caused by two wheeler accidents is now a major challenge due to its high prevalence and morbidity, causing death, aesthetic and functional sequel in many victims. Motorcycle crashes (MCCs) are crucial public health issues, accounting for \$12 billion worth of health care fees and productivity losses in 1 year in the United States.<sup>[3]</sup> A latest



overview concludes that helmets lessen the danger of mortality and head damage and show that multiplied helmet use may aid in the global effort to reduce traffic injuries.<sup>[4]</sup> In maximum countries, there are legal guidelines that compel the motorcyclists to put on helmets. However, they specially don't specify the most apt type of helmet that would result in fewer extreme injuries.<sup>[5]</sup> The main purpose of this study was to evaluate the helmets used and in relation to the type of facial injuries in a Kashmiri population of two wheeler accidents. Motorcycles are used as a common means of transportation and they are accountable for a main portion of trauma and deaths consistent with research.<sup>[6]</sup> Motorcyclists make up the bulk of victims of road injuries in growing communities.<sup>[7]</sup> Reports show that maximum road injuries involve bikes,<sup>[8]</sup> and this rate may be defined with the aid of using the inherent instability of motorcycles, the low stage of safety they provide as compared to automobiles and the failure of their riders and pillions to wear helmets.<sup>[8]</sup>

### MATERIAL AND METHODS

This study was approved by the Research Ethics Committee of Government Dental College & Hospital. This study was conducted in the department of Oral and Maxillofacial Surgery, from 1st July 2020 to 20th March 2021. The study comprised patients of all ages and both sexes admitted in the Oral and Maxillofacial region due to two wheeler

**Table 1:**

Total no of Accidents	Riders with helmet	Riders without helmet	ISI Mark
236	14	222	0
Under influence of alcohol or other abuse substance			
17	0	8	-

accidents. Detailed history was taken from patients and attendants regarding place, mode and possible cause of accident. Clinical examination of the patient were done and findings noted. All the radiological findings were evaluated and recorded. Data was recorded under following headings: Age, sex, date of injury, place of injury, time interval between RTA and hospitalization, vehicle involved, type of impact, cause of accident, helmet used or not, ISI mark on helmet or not (quality of helmet).

### RESULTS

The study was conducted in 236 patients. Most common age group affected was 17-35 years (80 %) and the mean age of the victims was 24.42 years. Male to female ratio was 11:1. Most of the patients reached the hospital within 12 hours of RTA (78.57 %). 7 % patients accepted to be under the influence of alcohol or some other substance abuse. 222 patients (94%) were not wearing helmet at the time of accident [Table 1]. 66 patients (28%) were below 18 years of age hence not allowed to ride as per traffic norms. 0 patients who were wearing a helmet at the time of accident had an ISI mark on their helmets i.e. helmets were not up to the mark. The type of fractures seen in maxillofacial region in our study are in [Table 2]. Mandibular fracture was seen in 76% of the patients, type of mandibular fracture seen in our study is in [Table 3].



**Table 2:**

Fracture Region	Percentage
Mandible fractures	76 %
Zygomatic Complex Fracture	12%
Naso Oribto Ethmoid fracture	8%
Dentoalveolar Fractures	4%

**Table 3:**

Type of Mandibular Fracture	Percentage
Condyle	46%
Parasymphysis	22%
Body	18%
Angle	12%
Coronoid	2%

## DISCUSSION

Motorcycle accidents are one of the leading causes of death in traffic all over the world. Among road deaths worldwide, injuries related to motorcyclists accounted for 9% of deaths in Europe, 20% in the United States and 34% in the countries of the Western Pacific and Southeast Asia.<sup>[9]</sup> When evaluating the distribution of patients on the basis of gender, a predominance of males (90.8%) was observed, corroborating different researches within the literature.<sup>[10]</sup> In our study (92%) of riders were males showing outright male predominance. This dominance of males may be because in Indian society mostly males bear the burden of earning, are more outdoors, riding of two wheeler by women is still considered taboo in certain sections of society and hence are more prone to accidents. The most identifiable age group was 17 to 35 year(80%), same to the research of Yu et al. (2011), in which 51.5% of the patients were young between 18 and 35 years of age.<sup>[11]</sup> The higher incidence of injuries in younger generation can be attributed to their more careless or inexperienced driving, their

youthfulness and energy.<sup>[12,13,14,15,16]</sup> Plus their excessive involvement in social activities.<sup>[17]</sup> In the present study, the majority (94%) of the motorcyclists had not worn helmets, which is consistent with a huge frame of literature. Bali et al.<sup>[18]</sup> reported a 10% helmet use. The lack of helmet use is simply one of the many elements contributing to the loss of lives and price to society related to damage triggered by MCCs. Associated alcohol and drug use and other high-risk behaviours confer an added level of risk.<sup>[19,20]</sup>

In our study 7 % of patients accepted to be under the influence of alcohol or the substance of abuse. Injury pattern seen maxillofacial region in our study showed that the most common bone to be affected was Mandible (76 %), followed by Zygomatic Complex (12 %) and Naso Orbito Ethmoid region (8 %). One of the significant findings in our study was the number of underage riders who are not eligible for driving license or a two wheeler license to ride as per law; (28%) were below 18 years of age hence not allowed to ride as per traffic rules and regulations.

## CONCLUSIONS

Our Study revealed common age group affected was 17–35 years (80 %) and the mean age of the victims was 24.42 years. The percentage of riders wearing was extremely low as low as 6%. And the quality of helmet was substandard as per Bureau of Standards (ISI) with 0 % of helmets bearing ISI mark which is alarming. The younger generation of our country and particularly Kashmir Region need to be made aware of traffic rules and regulations, they should be made aware regarding safe riding measures. Importance of Helmets needs to be instilled at mass level. The

importance of ISI marked helmets can't be overlooked as even the low percentage of riders using helmet use it just for the sake of it making sure they are not fined as per traffic rules. Awareness programs should be arranged for the general population and in particular for students in colleges and coaching institutes by the local governing bodies in order to make them aware regarding the importance of helmets and following of traffic rules in letter and spirit. Strict laws should be enforced against riders not wearing helmets while riding to reduce the morbidity and mortality inroad traffic accidents.

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- Source of Support: Nil, Conflict of Interest: None declared