

# Prevalence and Severity of Injuries in Patients Following Road Traffic Accidents: A Medicolegal Aspect

INAYATULLAH MAGSI<sup>1</sup>, SHAHLA IMRAN<sup>2</sup>, PARDEEP KUMAR<sup>3</sup>, ISHTIAQUE ALI LANGAH<sup>4</sup>, NADIA ASLAM<sup>5</sup>, RUBINA SALMA YASMIN<sup>6</sup>

<sup>1</sup>Assistant Professor, Department of Forensic Medicine and Toxicology, Chandka Medical College/SMBBMU, Larkana, Sindh, Pakistan

<sup>2</sup>Assistant Professor, Department of Forensic Medicine & Toxicology, Bilawal Medical College, LUMHS, Jamshoro, Sindh Pakistan

<sup>3</sup>Associate Professor, Department of Forensic Medicine & Toxicology, PUMHSW, Nawabshah, Dist: (SBA), Sindh, Pakistan

<sup>4</sup>Assistant Professor, Department of Forensic Medicine, Loralai Medical College, Loralai, Balochistan, Pakistan

<sup>5</sup>Lecturer, Department of Forensic Medicine & Toxicology, LUMHS, Jamshoro, Sindh, Pakistan

<sup>6</sup>Associate Professor, Department of Forensic Medicine and Toxicology, Peshawar Medical College, Peshawar, KPK, Pakistan

Correspondence to: Pardeep Kumar, Email: [drpardeepgoswami99@gmail.com](mailto:drpardeepgoswami99@gmail.com), Cell: 0333-2727337

## ABSTRACT

**Background:** Around the world, road traffic accidents (RTAs) are the leading cause of morbidity and mortality, with the incidence being high in both developed and developing nations. This study was conducted with the goal of determining the pattern and degree of injuries following an RTA from a medical and legal standpoint.

**Study Design:** Retrospective analytical study.

**Place and Duration of Study:** Peoples University of Medical & Health Sciences for Women, Nawabshah from 1<sup>st</sup> October 2020 to 30<sup>th</sup> September 2021.

**Methodology:** Two hundred and ten patients of road traffic accident presenting in the emergency department were enrolled.

**Results:** Patients with road traffic accident were more likely to be motorcycle or scooter riders 59.2% or pillion riders 13.3%. The most prevalent age group was 20-29 years old, according to the results 39.5%. Most of the 210 patients had no internal injuries, and the few cases of polytrauma with internal injuries were quite rare 6.1%. Majority of males were involved in road traffic accident.

**Conclusion:** Men, bike/scooter drivers, and those between the ages of 22 and 29 are more likely to be involved in a traffic collision. According to the medicolegal perspective, patients who have been involved in road traffic accidents are more likely to sustain serious and life-threatening injuries.

**Keywords:** Prevalence, Severity, Injury, Road traffic accident

## INTRODUCTION

Accidents involving vehicles on public roads (road traffic accidents) are the leading cause of death and injury worldwide, and the occurrence is increasing. In both rich and emerging countries, unemployment is still quite high.<sup>17</sup> There are several distinct types of RTAs. Motorcycle accidents are the leading cause of death in the United States, a result of an accident in the majority of the country. Road traffic accidents are not the most prevalent type of injury resulting in medical care, but they are more likely to be linked with serious damage and long-term impairment, and they are the primary cause of death in children and young adults up to the age of thirty-two.<sup>8-10</sup> A substantial number of recorded series of persons claiming or receiving compensation have included injuries sustained in road traffic accidents, although these injuries are rarely treated as a separate category. Given the nature of the injuries and the conditions under which they occur, there are a number of legal and compensation concerns that are distinct from those that arise in the context of occupational and other types of damage. In spite of this, knowing the psychological consequences of an accident and its legal importance is extremely important for comprehending general concerns in personal injury compensation.<sup>11</sup>

A medico-legal case is a case of injury or illness in which the attending doctor, after obtaining the patient's history and doing a clinical examination, believes that some investigation by law enforcement agencies is necessary in order to determine who is responsible for the damage or illness. It is the obligation of a licensed medical professional to correctly evaluate each and every case, and in uncertain situations, it is preferable to notify the authorities immediately. This protects the doctor from making unwarranted and needless accusations later on.

## MATERIALS AND METHODS

The retrospective study was conducted at Peoples University of Medical & Health Sciences for Women, Nawabshah from 1<sup>st</sup> October 2020 to 30<sup>th</sup> September 2021 and 210 patients were enrolled. At the site of the trial, all the trauma patients presented to the emergency room (ER) for treatment was included. Trauma that is not connected to a road traffic accident, such as physical attack,

an unintentional fall, or an accidental injury caused by falling items were excluded. Each and every one of the patients who were brought in was dead or died before the detailed evaluations could be performed. Age, gender, different types of RTA, the location of the external damage, the types of internal injury, the severity of the injury, and management techniques were all gathered. The data was entered and analyzed through SPSS-20.

## RESULTS

There were 165 males (78.5%) and 45 females (21.4%) [Table 1]. Patients with RTA were more likely to be motorcycle or scooter riders (59.2%) or pillion riders (13.3%) [Table 2]. The most prevalent age group was 20-29 years old, according to the results (39.5%) [Table 3]. Most of the 210 patients had no internal injuries, and the few cases of polytrauma with internal injuries were quite rare (6.1%) [Table 4].

Table 1: Frequency of genders (n=210)

Gender	No.	%
Male	165	78.6
Female	45	21.4

Table 2: Patients are classified according to road traffic accident (n=210)

RTA	No.	%
Scooter rider	125	59.2
Pillion rider	28	13.3
Pedestrian	20	9.5
Driver	24	11.4
Passenger	13	6.2

Table 3: Frequency of patients according to age

Age (years)	No.	%
<10	29	13.8
10 – 19	36	17.1
20 – 29	83	39.5
30 – 39	25	11.9
40 - 49	21	10.0
50 - 59	16	7.6

Table 4: Frequency of injuries in RTA patients

Type of Injury	No.	%
No internal injuries	129	61.4
Intracranial injuries	17	8.1
Facial injuries	15	7.2
Dislocation of limbs	20	9.5
Spine injuries	16	7.6
Polytrauma	13	6.3

## DISCUSSION

Road traffic accidents appear to be on the rise among teenagers in both developing and industrialized nations, according to the World Health Organization. A possibility is that the involvement of young boys in RTA will have an impact on the overall burden put on society and the growth of the country.<sup>7</sup> The vast majority of medicolegal autopsy performed in Pakistan are on people who have been involved in traffic accidents.<sup>5-7</sup> The majority of RTA injuries are to the limbs and face on the outside, with the head being the most frequently injured on the inside.<sup>8</sup>

In order to reconstruct the accident, it is required to conduct a thorough investigation of the injuries received. Inferences about the relative locations of the victim and the vehicle at the time of the accident can be inferred from the type of the injuries sustained by the victim. The type of the decedent's injuries as well as any trace evidence collected from them will also aid in establishing a link between the suspect vehicle and the crime in hit and run situations.<sup>10</sup> Furthermore, it may be feasible to provide a judgement as to whether or not the car had struck and killed the deceased. Road traffic accidents are the leading cause of death and injury worldwide, accounting for one-fifth of all fatalities and causing the majority of catastrophic injuries. Every year, over 1.2 million people die in road traffic accidents throughout the world, with an additional 50 million people being wounded.<sup>10</sup> Any mode of transportation has the potential to cause injury or death, but the most prevalent are those involving the road, rail, and air transportation systems. The most common type of injury in our study was a motor vehicle or scooter rider injury. As the use of vehicles increases, injuries caused by them are becoming more common. It is therefore necessary for a medical officer to be able to assess injuries, the mechanisms by which they are caused, the cause of death, and whether alcohol or drugs played a role in the accident. The injuries suffered by both pedestrians and drivers or passengers frequently follow a distinct and recognizable pattern,

regardless of whether the pedestrian is driving or riding in the vehicle.<sup>11</sup>

## CONCLUSION

Men, bike/scooter drivers, and those between the ages of 22 and 29 are more likely to be involved in a traffic collision. According to the medicolegal perspective, patients who have been involved in road traffic accidents are more likely to sustain serious and life-threatening injuries.

## REFERENCES

1. Chaudhary A, Kunwar S, Ghimire S, Wasti H. patterns and severity of injuries in patients following physical assault – a medicolegal aspects. *Eastern Green Neurosurg* 2020; 2(2):16-20.
2. Gopalakrishnan S. A public health perspective of road traffic accidents. *J Fam Med Primary Care* 2012;1(2):144.
3. Amin K, Skyving M, Bonander C, Krafft M, Nilson F. Fall-and collision-related injuries among pedestrians in road traffic environment: a Swedish national register-based study. *J Safety Res* 2022.
4. Yang Z, Zhang W, Feng J. Predicting multiple types of traffic accident severity with explanations: A multi-task deep learning framework. *Safety Sci* 2022;146:105522.
5. Bryant RA, Harvey AG. Acute stress response: A comparison of head injured and non-head injured patients. *Psychol Med* 2019;25(4):869-73.
6. Roozenbeek B, Maas AI, Menon DK. Changing patterns in the epidemiology of traumatic brain injury. *Nature Rev Neurol* 2013;9(4):231-6.
7. Kendrick D, das Nair R, Kellezi B, Morriss R, Kettlewell J, Holmes J, et al. Vocational rehabilitation to enhance return to work after trauma (ROWTATE): protocol for a non-randomised single-arm mixed-methods feasibility study. *Pilot Feasibility Studies* 2021;7(1):1-2.
8. Naci H, Chisholm D, Baker TD. Distribution of road traffic deaths by road user group: a global comparison. *Injury Prevent* 2009;15(1):55-9.
9. Vu HM, Dang AK, Tran TT, Vu GT, Truong NT, Nguyen CT, et al. Health-related quality of life profiles among patients with different road traffic injuries in an urban setting of Vietnam. *Int J Environ Res Public Health* 2019; 16(8): 1462.
10. Odera W, Garner P, Zwi A. Road traffic injuries in developing countries: a comprehensive review of epidemiological studies. *Trop Med Int Health* 2012;2(5):445-60.
11. International Transport Forum. Reporting on serious road traffic casualties: combining and using different data sources to improve understanding of non-fatal road traffic crashes. *Int Traffic Safety Data Analysis Group*; 2012.