

Road Traffic Accidents Attending an Emergency Department in a Tertiary Care Hospital in Pakistan: A Retrospective Study

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Abstract

Aim: To assess the demographic characteristics of road traffic accidents attending an emergency department in a tertiary care hospital

Study design: A retrospective study

Place and Duration: This study was conducted at Civil Hospital Larkana Pakistan from June 2020 to June 2021.

Methodology: The study is single-centered, with the target population being all patients aged 1-80 years who were admitted with a history of road traffic accidents. The data were collected from the medical records department, with a sample size of 1250 patients

Results: A total of 1250 participants were included in the study. More than 48.8% of accident patients (n=610) were found to be between the ages of 21 and 30, with the next most common age group being 31 to 40 years (28.8%, n=360). There were 1040 males (83.2%) and 210 females (16.8%). The Monsoon season had the highest number of RTA at (64 %; n=800), followed by winter (16 %, n=200), summer (12 %, n=150), and autumn (8 %, n=100)

Conclusion: According to this study multiple factors are linked to road traffic accidents (RTA). Most of the causes that cause RTA and its fatal consequences can be avoided. The majority of them can be mitigated using a multipronged strategy.

Keywords: Fracture, Injury, Road Traffic Accident, Retrospective study

Introduction:

Road Traffic Accident (RTA) related injuries are a global public health hazard that disproportionately affects low- and middle-income countries, which account for more than 90% of all road fatalities. (1) With a population of ~225 million people, Pakistan is the world's fifth most populated country. (2) According to Pakistan's national injury study, the overall annual incidence of trauma is 41 injuries per 1000 people. Road traffic injuries were identified as one of the leading causes of injury in the survey. Annually, 15 people are injured in road traffic accidents for every 1000 people. (3) According to the World Health Organization, road traffic accidents are the sixth leading cause of mortality, disability, and economic loss among the young and middle-aged population (WHO). (4) The United Nations has declared 2011-2020 to be the Decade of Action for Road Safety, intending to save five million lives. (5)

Appropriate RTA documentation is still missing in Pakistan, particularly regarding the less studied epidemiological and contextual components. Age, gender, and urban-rural distribution, type of vehicle, type of roads used, the time distribution of accidents, preventative actions are taken, and cause of accidents, notably over speeding, sloppy driving, and unfavorable weather conditions have all been consistently recorded in studies. On the other side, variables such as the opposing colliding vehicle, vehicle seating capacity, accident site, victim perspective, psychological issues, and prehospital care-related factors have gotten less attention, with only a few studies documenting these variables. (6)

Road traffic injury-related mortality is rising globally, but it is more than three times greater in low-income countries. This gap is partly due to the undeveloped prehospital and in-hospital trauma care infrastructure. (7) Epidemiological data obtained from local studies with robust techniques is particularly significant for developing efficient road safety systems and efficiently addressing prehospital care in RTAs. According to our understanding, only a few studies conducted in Pakistan. There is much less information concerning the circumstances on the day of the accident.

This study aimed to look at the demographics, mode of injury, body part broken, kind of fracture, and type and number of treatments performed on patients who had been in a road traffic accident. In addition, we evaluated the data in terms of the number of fatalities and the causes of those deaths and obtain injury statistics.

Methodology

The study is a single-center retrospective observational study with all patients aged 1 to 80 years as the target group admitted to the Department of Orthopaedics having a history of traffic accidents. The data was collected from medical records department, with a sample size of 1250 patients. Permission was taken from the ethical review committee of the institute

All patients admitted to the Department with a history of RTA and all patients treated with conservative and surgical care of fractures caused by RTAs meet the inclusion criteria. Patients admitted with fractures unrelated to RTAs or patients who have fractures due to industrial accidents are excluded. The clinical parameters / proforma consist of the following: Demographics, Type of operation, Complications, Type of fracture, and associated injury. All clinical pictures and x-rays of the involved limb were taken. SPSS version 23 was used for data analysis

Results

The purpose of this retrospective study was to determine the various epidemiological characteristics associated with road traffic accident. There were n=1040 (83.2%) male victims and n=210 (16.8%) female victims among those who reported. 6.18:1 was the male-to-female ratio. (As shown in Figure 1). Majority of the victims in this study (48.8%, n=610) were between the ages of 21 and 30, followed by 31-40 years (28.8%, n=360) and 41-50 years (16 %, n=200). Group 51-60 years old (6.4 %, n=80) (As shown in Table 1). The Monsoon season had the highest number of RTA at (64 %; n=800), followed by winter (16 %, n=200), summer (12 %, n=150), and autumn (8 %, n=100). (As shown in Figure 2)

Fall/slip (45.6 %; n=570) was the most common precipitating factor in our study, followed by over speed (34.4 %; n=430), (6 %; n=200) who were using a cell phone while driving, and (4 %; n=50) who were under the influence of alcohol. (As shown in Table 2).

In terms of fractures, patients were more likely to have lower extremity fractures (690, 55.2 %) than upper extremities fractures (560, 44.8 %). Distal radius-ulna fractures (180, 28 %) were the most common upper extremity fractures, followed by proximal humerus fractures (90, 14 %). The most common lower extremity fractures involved the knee joint in 50% of cases. Tibia-fibula shaft fractures and proximal tibia fractures account for almost 14% of all fractures, followed by distal femur fractures (12.6%) and patella fractures (around 9 %).

In this study, n=700 (56%) of the 1250 patients required surgery, either with debridement and an external fixator in the case of 240 open fractures (19.2%) or nailing and plating in the case of displaced closed fractures (167, 13.6 %). n=143; 11.4 % of patients were treated conservatively with plaster or crepe bandage for undisplaced fractures and contusions.

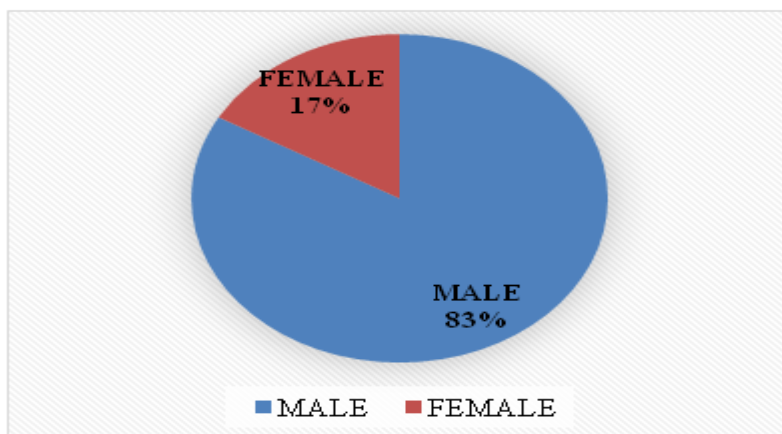


Figure 1: Gender distribution of RTAs.

Table 1: RTAs are distributed according to age groups.

Age (in Yrs.)	No. of Cases	Percent (%)
21-30	610	48.8
31-40	360	28.8
41-50	200	16
51-60	80	6.4
Total	1250	100

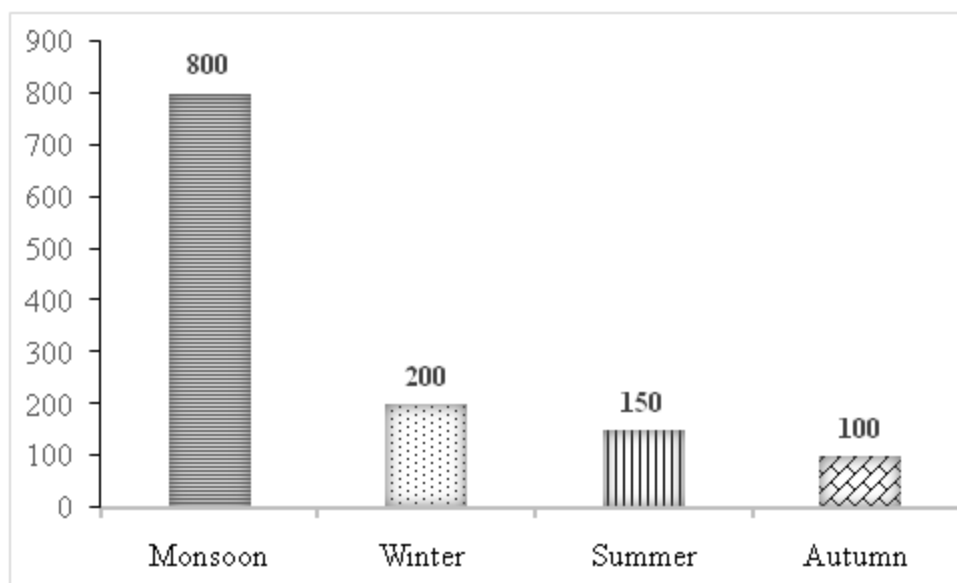


Figure 2: Season-wise distribution of RTAs.

Table 2: The distribution of patients based on the causes of RTAs

Type of accident	No. of accidents	Percent
Fall / slip	570	45
Over speed	430	34
Cell phone while driving	200	6
Alcohol	50	4
Total	1250	100%

Discussion:-

RTAs have been identified as one of Pakistan's main sources of injury in prior research. Our findings were consistent with earlier reports that RTA injuries accounted for 30%–86% of trauma admissions. RTA injuries consume a large amount of human and physical resources in low- and middle-income countries' health systems. The prevention of these injuries can improve the healthcare system's capability.

There were 1040 (83.2%) male victims and 210 (16.8%) female victims among those who reported. 6.18:1 was the male-to-female ratio. Our findings are in line with previous research, which found that males made up the majority of RTA victims. (8, 9) Males are more prone to road traffic accidents than women since they leave their homes more frequently for work and other reasons therefore the majority of male involvement is to be expected. (10)

The Monsoon season had the highest number of RTA at 64 % (n=800), followed by winter (16 %, n=200), summer (12 %, n=150), and autumn (8 %, n=100). This rising trend could be due to the rainy season, limiting road visibility and making the road slippery, causing a loss of vehicle control and an RTA. Our findings are consistent with those of Chourasia et al. (9)

Overspeeding, drinking too much alcohol, and using a cell phone while driving is all documented hazards that can threaten road safety at any time. In our analysis, 45.6 %; n=570 of the recorded RTA instances were linked to Fall/slip and (34.4 %; n=430) were related to over speeding. In comparison to Amin et al. study, this study's result is more favorable. (11) In our study, just a few patients admitted to being under the influence of drugs or alcohol. However, incident probably went unreported due to the stigma associated with alcohol consumption in Pakistani society. In Pakistan, there is a scarcity of knowledge about alcohol abuse in general and driving while inebriated in particular. In Pakistan, more work is needed to study the prevalence of substance usage and its association with RTA injuries. (12)

Injury is seen in almost all RTAs; however, the severity of the injury and the body part affected vary according to the speed, method, and kind of contact. Patients in this study had a higher rate of lower extremity fractures (690, 55.2%) than upper extremity fractures (560, 44.8 %). Distal radius-ulna fractures were among the most common upper extremity fractures (180, 28 %). Furthermore, 50% of the most common lower extremity fractures occurred around the knee joint. Our findings are consistent with those of a Pakistani study, which found that the most prevalent site of damage was the lower leg. (3, 8, 9, 13)

Conclusion:-

RTAs are one of Pakistan's leading causes of mortality, disability, and hospitalisation. Promoting awareness, developing a road safety information database, advocating for improved road infrastructure, including the use of intelligent transportation, and enforcing safety laws are all critical.

Funding source

None

Conflict of interest

None

Permission

Permission was taken from the ethical review committee of the institute

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