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Descriptive Study of Road Traffic Accidents in Kashmir

Authors
Mohammed Sarwar Mir[1], Tufail Ahmad[2] Haroon Rashid[3], Shaista Ganai[4], Humera Irshad[5]
[1,2,4,5]Post Graduate Dept of Hospital Administration, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, Jammu & Kashmir, India-190010
[3]Assistant Professor, Dept of Hospital Administration, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, Jammu & Kashmir, India-190010
Corresponding Author
Mohammed Sarwar Mir
Email: *mohammedsarwarmir@gmail.com*

Abstract
Accidents, tragically, are not often due to ignorance, butare due to carelessness, thoughtlessness and over confidence. Human, vehicle and environmental factors play roles before, during and after a trauma event. Accidents, therefore, can be studied in terms of agent, host and environmental factors and epidemiologically classified into time, place and person distribution.
This study was done to understand the epidemiological characteristics of road traffic accident victims, the various types and sites of the injuries and to emphasize the importance of behavioral change in population regarding road safety rules rather than just improving the road conditions and to know the commonest injury so that the proper personal protective measures can be applied.
A prospective study was conducted from 1st October 2014 to 30th September in Accident and Emergency Department of Sher-i-Kashmir Institute of Medical Sciences, Srinagar, largest hospital of Kashmir. A total of 886 cases were studied. Male: Female ratio was about 4:1. 21-30 year age-group was the commonest age-group affected (34.09%). Most of the victims (54.74%) presented during summer season. Two wheelers (43.45%) were most common vehicle involved and majority of the victims had head injury (35.4%). Only 9.71% of the victims presented to the hospital within 1 hour of the accident.
Keywords: *Road Traffic Accident, Accident, Trauma, Injuries.*

Introduction

Road traffic injuries are a major cause of death and disability globally, with a disproportionate number occurring in developing countries[1]. Road traffic injuries are currently ranked ninth globally among the leading causes of disability adjusted life years lost and the ranking is projected to rise to third[1]. In 1998, developing countries accounted for more than 85% of all deaths due to road traffic crashes globally and for 96% of all children killed. Moreover about 90% of the disability adjusted life years lost worldwide due to road traffic injuries occur in developing countries [1,2]. The problem is increasing at a fast rate in developing world[3]. Policy makers need to recognize this growing problem as a public health crisis and design appropriate policy responses [4].

The trend of increasing numbers of injuries is likely to continue as the number of motor vehicles rises, especially in countries with low numbers at present[5]. People in developing countries, which comprise 84% of the global population, currently own around 40% of the world's motor vehicles[3]. It is estimated that 1.26 million people worldwide died in 2000 from road traffic accidents, 90% of them in low and middle income countries. In 2000, the road traffic injury rate for the world was 20.8 per 100,000 populations (30.8 in males, 11.0 in females) [6].

India accounts for about 10% of road accident fatalities worldwide. Road accidents contributed 37.9% percent to all kind of unnatural accidental deaths during 2008-09. Out of total road traffic accidents, 30% were fatal in nature. Rate of death per 1000 vehicle was 1.4 in 2009.In India alone, the death toll rose to 14 per hour in 2009. The total number of deaths every year due to road accidents has passed the 135,000 mark [7].

Kashmir is passing through a phase of rapid urbanization, motorization and industrialization but the lack of safety related policies and programmes have resulted in increased incidences of road traffic accidents. This study was done to understand the epidemiological characteristics of road traffic accident victims, the various types and sites of the injuries and to emphasize the importance of behavioral change in population regarding road safety rules rather than just improving the road conditions and to know the commonest injury so that the proper personal protective measures can be applied. Study will act as a useful tool for providing healthcare facilities to reduce the road traffic accidents associated mortality and morbidity.

Material and Methods

A prospective study was conducted at Sher-i-Kashmir Institute Medical Sciences, SKIMS, Srinagar from 1st October 2014 to 30thSeptember 2015. The study group-consisted of all the Road Traffic Accident victims reporting to Accident & Emergency Medicine of SKIMS in the above one year period.

For the purpose of the study, a Road Traffic Accident (RTA) was defined as accident, which took place on the road between two or more objects, one of which must be any kind of a moving vehicle. Any injury on the road without involvement of a vehicle (e.g. a person slipping and falling onthe road and sustaining injury) or injury involving a stationary vehicle (e.g. persons getting injured while washing or loading a vehicle).

Data gathered included demographic details, the time of injury, nature of injury, type of the vehicle and the region of body injured. Also recorded were whether the injured person was the driver or the occupant of the vehicle or a pedestrian.

The medico-legal records and case sheets were referred for collecting the data. Interviews of the victims/attendants and accompanying police personnel were also conducted to supplement the information collected.

Data was collected according to a predesigned and pretested proforma. All the data were analyzed using SPSS version 20 software and frequencies and tabulations were determined.

Observations and Results

A total of 886 road traffic accidents were registered in the Accident and Emergency Department of SKIMS over a period of one year from October 1st 2014 to September 30th 2015.

Table 1-Genderwise Distribution

Gender	Frequency	Percentage
Male	727	82.1%
Female	159	17.1%
Total	886	100.0%

Table 1 shows that majority of the victims were males accounting for about 82.1% of the victims

Table 2-Age wise distribution

Age Group	Frequency	Percentage
0-10	56	6.32%
11-20	181	20.43%
21-30	302	34.09%
31-40	146	16.48%
41-50	92	10.38%
51-60	65	7.34%
>60	44	4.97%
Total	886	100.0%

Table 2 shows that most of the victims were young belonging to the age group of 21-30 years (34.09%) followed by age group of 11-20 years (20.43%).

Table 3: Geographical Distribution

Gender	Frequency	Percentage
Urban	462	52.14%
Rural	424	47.85%
Total	886	100.0%

Table 3 shows that 52.14% of the victims took place in the urban areas.

Figure 1-Time of the Accident

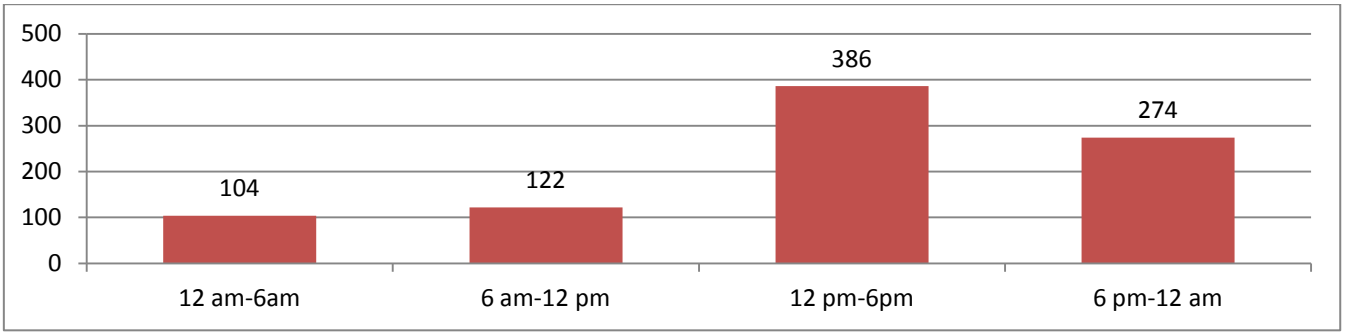

Figure 1 shows that majority of the accidents (43.57%) took place between 12 pm -6 pm.

Figure 2-Time between the Accident and Reporting to the Hospital

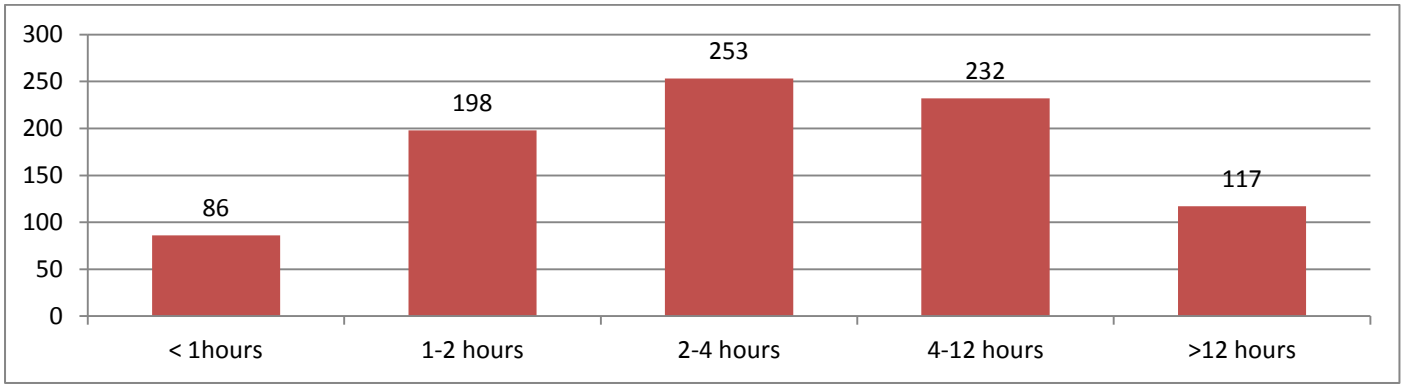

Figure 2-Most of the RTA victims reported to the hospital between 2-4 hours after the accident followed by 4-12 hours after the accident. Only 9.75% of the RTA victims reported within in one hour of the accident.

Figure 3-Season wise Distribution

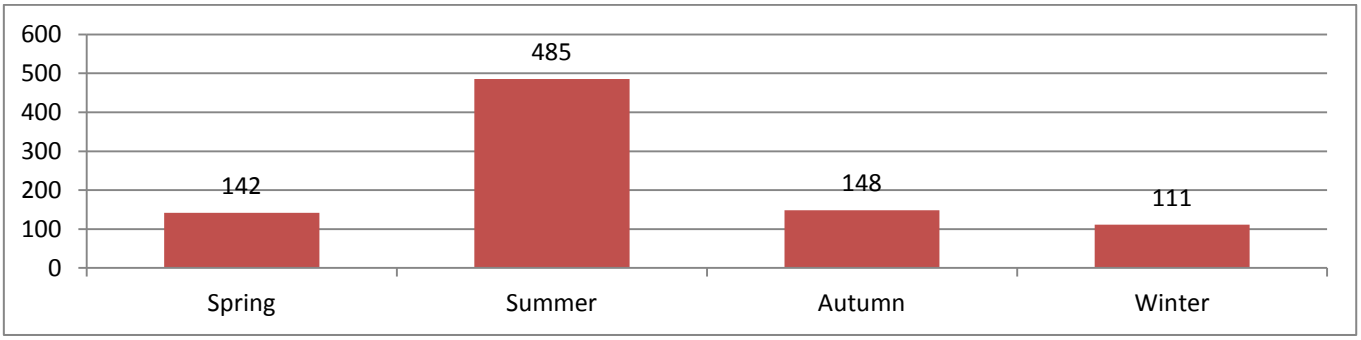

Figure 3 shows that majority of the RTA victims (54.74%) presented during summer season

Figure 4: Distribution According to Site of Injury

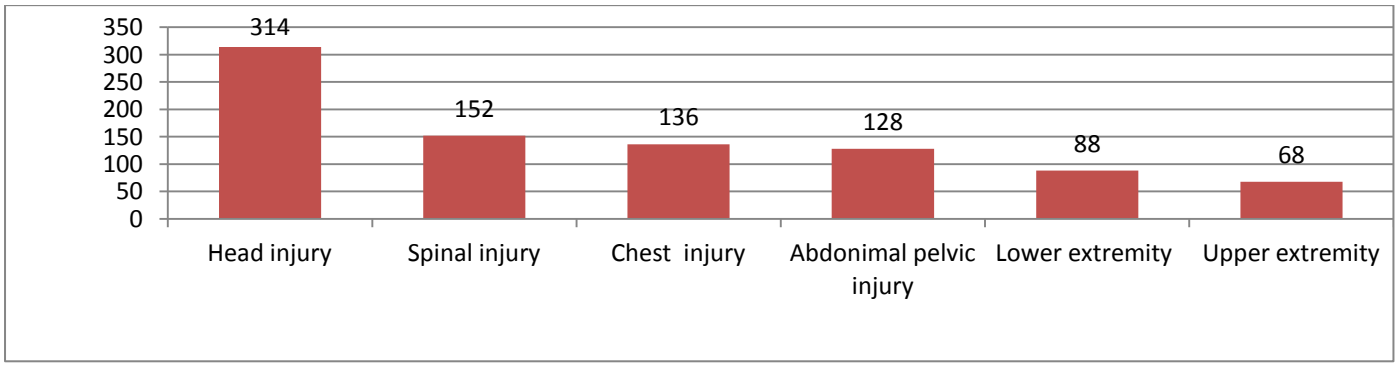

Figure 4 shows that head injury (35.44%) was the commonest type of injury sustained followed by spinal injury (17.16%).

Figure 5-Distribution of Injured Persons

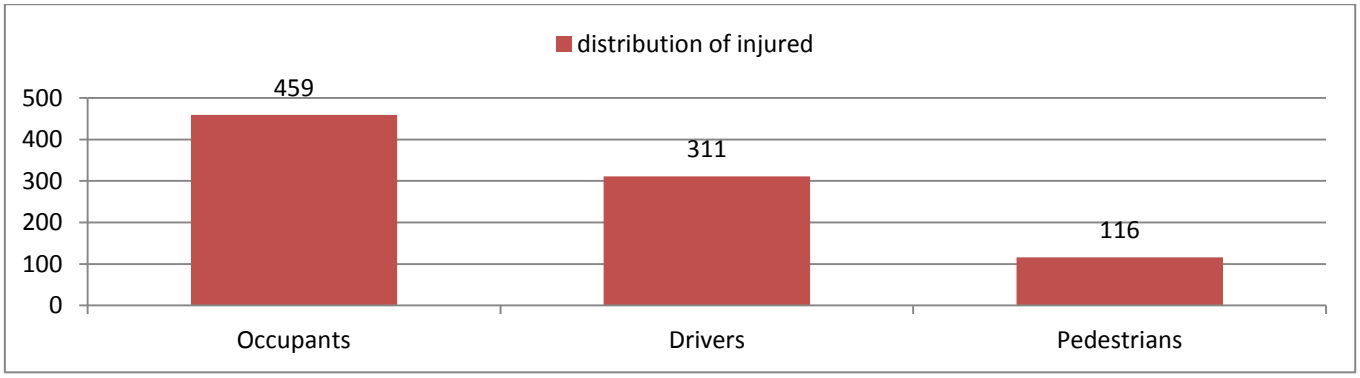

Figure 5shows the majority of the RTA victims were occupants (51.8%)

Figure 6-Distribution of RTA Victims According to the Type of Vehicle Involved

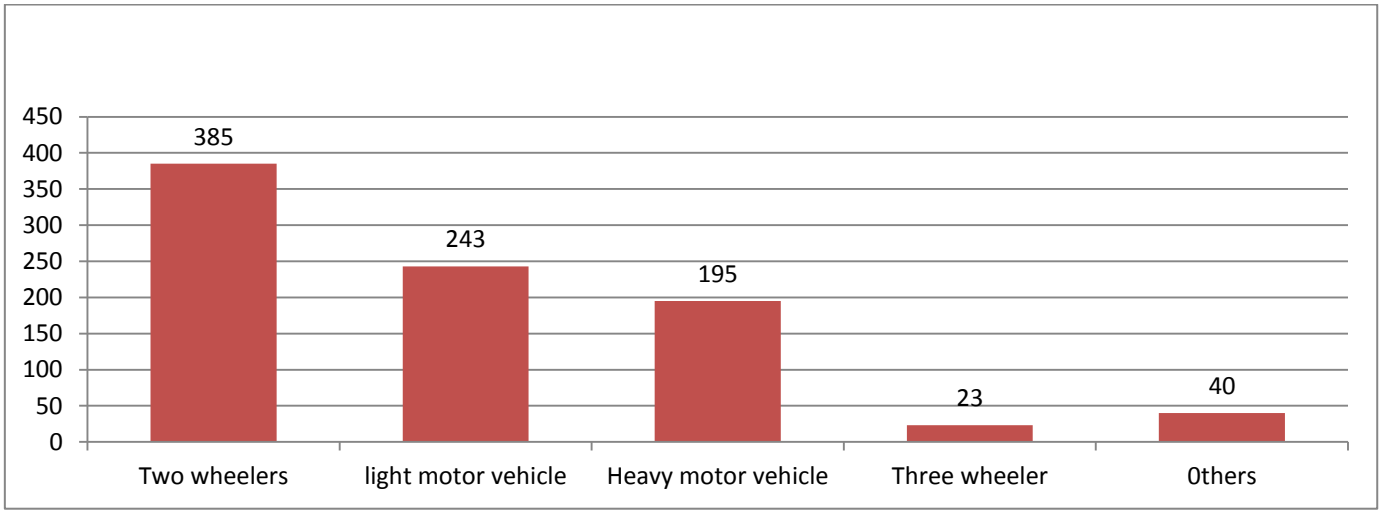

Figure 6 shows that two wheelers (43.45%) were most commonly involved followed by light motor vehicles (27.42%)

Discussion

Each year 1.2 million people are killed in road traffic crashes around the world leaving behind shattered families and communities. Most of those killed are young, in the prime of their lives, whose presence and contributions are greatly needed by families and countries. The impact of such traumatic events is the cumulative toll of suffering, truly unimaginable since millions more are added to the millions of people who are adequately affected and whose suffering is aggravated by inadequate response to their losses. As well the emotional and psychological pain endured, losing a family member can put significant financial strain on a family. Families are driven into poverty by the cost of prolonged medical care, the loss of a family breadwinner or extra funds needed to care for people with disabilities.

In the present study, the highest number of RTA victims (34.09%) were found between the age group of 21 and 30 years. The similar findings were also reported from Delhi and Nepal[8,9]. About 55% of the victims were between ages of 21-40 years. This shows that the people of the most active and productive age group are involved in RTAs, which adds a serious economic loss to the community. Lower proportion of RTAs in those aged 60 and above could be due to the generally less mobility of the people. A high occurrence of road traffic accidents among young adults has been thought to be due to wider range of activities engaged in by this class of people. They are more likely to have reasons to move from one place to another.

The accident rates were higher in males (82.1%) than in females according to this study. Similar results were also observed in by other

reaseachers[10,11,12]. Males are much more exposed to RTAs than females. This may be due to the fact that males are more active than females in various outdoor activities.

In the present study, the peak time for accidents was between 12 Pm- 6 Pm (43.57%).The findings are consistent with study of SP Mehta [8]conducted in Delhi. The hours are the busiest as commuters return from the schools, offices, factories and business place. These times coincide with the period when people are more active and mobile.

In present study only 9.75% of the road traffic accident victims reported to hospital within one hour of the accident. Majority of the patients (71.44%) reported between 2-12 hours after the incident. The initial one hour is regarded as the "Golden Period" in the management of trauma victims. In majority of the cases the patients reached the tertiary care trauma centre i.e. SKIMS after 2 hours of the accidents. Precious time is being lost in transporting the patient which has an adverse affect on the outcome. Hence, advanced trauma centres at should be established along the highway so that adequate and timely care reaches to the critical sick accident victims.

In present study 54.74% of the road traffic accident victims reported during the summer months. It can be explained by the fact that summer months are full of activities in Kashmir. It is the tourist season in the valley and thousands of vehicles are added to the roads in these months leading to increased incidences of road traffic accidents.

Head injury (35.44%) was the commonest injury sustained by RTA victims in our study followed by the spinal injuries (17.16%). The findings are consistent with the studies of other researchers [13,14].This study suggests that majority of the RTA victims had no protective measures like helmets for two wheeler vehicles and seat belts in light motor vehicles which has resulted in increased incidences of neurotrauma.

Occupants (51.80%) constituted largest group of injured victims. The results are consistent with the findings of Morid M Hanna et al [15].The findings suggest that majority of the occupants of the vehicles do not take any personal protective measures while travelling.

Two wheelers (43.45%) were the most common vehicles involved in road traffic accidents followed by light motor vehicles (27.42%) in this study. The findings are similar to the study of S.V Kuchewar et al [16].The findings can be explained by the fact that there has been an explosion in number of motorbikes ,scooters and cars on the roads of Kashmir valley. Increase in number of young drivers often without valid driving licenses has created havoc on the roads.

Conclusion and Recommendations

This study concluded that the road traffic accidents were highest among the age group of 21-30 years. Males were affected more than females. The highest number of RTA victims was reported in the summer season. The highest number of accidents occurred from 6 pm to 12 pm. Only 9.75% of victims reached specialized hospital within 1 hour of the accident. Head and spinal injuries were the most common injuries sustained. More occupants were involved in the accidents than drivers and pedestrians. Two wheelers were commonest vehicles involved in road traffic accidents.

This study would like to suggest some recommendations which are listed below:

1) Basic trauma and Life support and Basic life support techniques can improve survival. People especially public transport drivers, policemen, journalists and teachers should be trained in these courses.
2) Advanced trauma and life support (ATLS) and Advanced life support (ALS) training should be made compulsory for doctors, nurses and other paramedical staff.
3) Licensing authorities should adopt stricter, more comprehensive and scientifically based tests laying a more stress on road rules, regulations and traffic control devices.
4) Strict implementation of traffic rules and regulations with monitoring of road users to ensure and enforce safe driving.

5) Education programmes in the community to change attitudes positively, stop reck less driving, obey traffic rules and use of protecttive devices like helmets and seat belts.
6) Roads should be properly planned and maintained. As far as pedestrians and slow moving vehicles are concerned, complete segregation from the highway should be carried out.
7) Advanced Trauma centres (ATC) must be established along the major highways with intensive care units (ICU), Neurosurgeons, Vascular, Trauma surgeons and critical care specialists for management of complex life threatening injuries in an organized manner.
8) Critical care ambulances to shift the road traffic accident victims to the higher centres.

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