Section: Community Medicine

Research

PROFILE OF ROAD TRAFFIC ACCIDENT VICTIMS ADMITTED TO TERTIARY CARE HOSPITAL IN TRICHY

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Abstract

Background: Road Traffic Accidents (RTA) has emerged as an important public health issue which needs to be tackled by a multidisciplinary approach. Awareness creation, strict implementation of traffic rules &scientific engineering measures are the need of the hour to prevent this public health catastrophe. This article is intended to create awareness among health professionals about various modalities available to prevent road traffic accidents. To study the prevalence, type and outcome of Road Traffic Accident victims admitted in Trichy's tertiary care hospital. **Materials and Methods:** A cross-sectional descriptive study was conducted on Road traffic victims admitted to the Chennai Medical College Hospital and research centre for two months from January 2016 to March 2016. The study tool was a predesigned semi-structured questionnaire. Statistical analysis: SPSS v.15.0. **Result:** Among the 140 RTA victims included in the study, a majority (70%) belonged to the age group 21 to 60, which constitutes the working population of the society, among whom 87% of the victims were Males. More than half (60%) had sustained Simple injury; the most common vehicles involved were two-wheelers. **Conclusion:** Strict enforcement of traffic rules will go a long way in preventing fatal and non-fatal injuries due to road traffic accidents.

INTRODUCTION

Recently, there has been drastic growth in all the infrastructural facilities, particularly in the road network. Accidents and Road crashes have cost the Indian Subcontinent a massive loss of about Rs.75000 crores yearly. Hence, accidents and road crashes are among the major hindrances to the development of India.[1] Injury causes the death of over five million people worldwide each year despite no longer being perceived as unavoidable but largely preventable events. Out of this, 1.2 million are due to Road Traffic Accidents (RTA), 90 per cent of which occur in low- and middle-income countries.[2] It is predicted that by 2020, RTA will become a major culprit in the total disease burden. In India, though the rate of deaths per thousand vehicles has come down to 1.4 per cent (2009) compared to 1.5 per cent in 2005, deaths resulting from RTA have risen by 7.3 per cent from 2008 to 2009.[3]

In 2015, about five lakh road accidents in India killed about 1.5 lakh people and injured about five lakh people. As a signatory to the Brasilia declaration, India intends to reduce road accidents and traffic fatalities by 50% by 2022.[4] The Motor Vehicles (Amendment) Bill, 2016, has been listed for consideration and passage in the current Budget Session of Parliament. It seeks to address road accidents, third-party insurance and road safety measures.[5] Many of these fatalities are pedestrians, cyclists, and riders of motorised two-wheelers. This is because the three modes contribute a large share of daily trips. According to Census 2011, the three modes contribute up to 70% of work trips in India.[6] The risk of being involved in a fatal road traffic crash has increased for Indian citizens over the past few years.[7] While some of this increase can be attributed to the number of motor vehicles per capita in India, increasing vehicle ownership need not result in increased fatality rates if adequate safety measures are implemented.[8]

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This study was conducted to type and outcome of RTA admitted in tertiary care hospital in Trichy for the past two months. In addition, a cross-sectional study was conducted in the Chennai Medical College Hospital and research centre (Irungalur), Tiruchirapalli, covering 140 individuals.

MATERIALS AND METHODS

A cross-sectional descriptive study was conducted on Road traffic victims admitted to the Chennai Medical College Hospital and research centre for two months from January 2016 – March 2016. The study tool was a predesigned semi-structured questionnaire which included demographic details like age, gender, type of vehicle involved in RTA, weather conditions, road conditions etc. The injuries were classified into Simple, grievous, dangerous and deadly.[9] The information was collected from the victims or attendants of Victims through the interview method. Data were collected, entered and analysed using SPSS V 15.0 software. The data so collected was tabulated using simple descriptive tables and frequencies.

RESULTS

The study was done among 140 road traffic victims who attended the Chennai medical college Hospital during the study period were included in the study.

Table 1: Distribution of study participants based on Socio-demographic pattern

Category		Frequency	Percent
Age (yrs.)	0 -20	19	13.6
	21 - 40	56	40
	41 - 60	42	30
	>60	23	16.4
Gender	Male	122	87.1
	Female	18	12.9

Among the 140 RTA victims included in the study, the majority (70%) belonged to the age group 21 to 60, which constitutes the working population of the society, among whom the majority (87%) of the victims were Males.

Table 2: Distribution of Study Participants Based on Type of Injury

Type of Injury	Frequency	Percent
Simple Injury	84	60
Grievous Injury	43	30.7
Dangerous Injury	6	4.3
Death	7	5
Total	140	100

Among the RTA victims, 60% had sustained Simple injuries characterised by bruises, minor cuts etc., while 30.7% suffered grievous injuries like lacerations, Deep wounds. Around 9.3% had sustained Dangerous injuries (Severe Head injury etc.) and death.

Table 3: Distribution of Type of Vehicle Involved In RTA

Vehicle Type	Frequency	Percent
Two-wheeler	129	92.1
Four-wheeler	10	7.1
Truck	1	0.7
Total	140	100.0

The majority (92.1%) of vehicles involved in the RTA were two-wheelers, followed by four-wheelers and trucks.

Table 4: Distribution based on various factors associated with RTA

Variables		Frequency	Percent
Road Condition	Good	135	96.4
	Bad	5	3.6
Lighting Condition	Bright	104	74.3
	Dark (Inadequate)	36	25.7
Road type	No entry	13	9.3
	One way	16	11.4
	Two ways	53	37.9
	Four ways	6	4.3
	National Highway	52	37.1
Holding a valid legal license	Yes	78	55.7
	No	62	44.3
Weather condition	Sunny	96	68.6
	Cloudy	1	0.7
	Foggy	10	7.1
	Night	33	23.6

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The majority (96.4%) of accidents occurred on good-condition roads. On the other hand, around 25.7% of accidents occurred in bad/ dark lighting conditions. Most (75%) of the accidents occurred on Two ways and High way roads. Nearly half, i.e. (44.3%) of them did not have a valid license, mostly two-wheelers. Around 68.6% of accidents occurred on a sunny day.

Table 5: Profile of victims of RTA

Variables		Frequency	Percent
Co-morbid Condition	Present	68	48.6
	Absent	72	51.4
Severe wounds needing suturing	Yes	61	43.6
	No	79	56.4
State of Mind during hospitalisation	Conscious	126	90.0
	Unconscious	14	10.0
Alcohol influence	Yes	32	22.9
	No	108	77.1

Nearly half (48.6%) of the victims had pre-existing co-morbidities like diabetes, hypertension, respiratory problems, cardiac conditions etc. Nearly half (43.6%) of them had deep wounds needing suturing. The majority (90%) of them were conscious during hospitalisation. Around 22.9% of accidents occurred under the influence of alcohol.

Table 6: Distribution of RTA based on the Nature of Accidents

Nature of Accidents	Frequency	Percent
Head on collision	77	55
Rear end collision	5	3.6
Left turn collision	6	4.3
Right turn collision	18	12.9
While overtaking	33	23.6
While taking U-turn	1	0.7

More than half (55%) of the accidents occurred on Straight Roads with no signals or junctions, while 23.6% of accidents occurred during Overtaking, while the rest occurred at the junction.

DISCUSSION

Most of the accident victims in our study were in the age group of 21 – 40 years. In addition, they were males, similar to a study done by Farooqui et al.[10] In the present study, the simple injury was the most common presentation, accounting for 60%, and the grievous injury was 30.7%, similar to the study.

A study by Kar et al. in Bhubaneswar observed that 33.2% had simple injuries. In comparison, the grievous injury was 37.4%, and fatal injuries were 29.4%, while in the present study, 60% were simple injuries, 30.7% were grievous injuries, and 5% were fatal injuries. The difference in the two studies has to be viewed in the context of road conditions of respective geographical locations.11 In the present study, the most common nature of the accident was a head-on collision, which accounted for 55% of Road Traffic accidents, followed by overtaking (23.6%), right turn collision, which is similar to the study conducted by Kar et al., where Head on Collison (21.2%) was highest followed by overturning (17.6%).[11]

The majority of types of vehicles involved in accidents were two-wheelers (92.1%) followed by four-wheelers (7.1%) and Trucks (0.7%), which is in contrast to findings of a study by Ganveer et al., in which two-wheelers constituted 26.95%.[12]

According to Singh et al., among all injuries, cuts and scrapes accounted for 38.28%, abrasions for 38.15%, and bruises accounted for 3.9%. However, facial lacerations were widespread, at 38.83%. In addition, an almost similar number of patients (19.2%) sustained chest injuries, 13.2% sustained abdominal injuries, and 11.6% sustained spinal injuries. According to the findings, RTAs are a big issue for public health. Therefore, immediate preventative efforts must be aimed at lowering the number of RTAs if the associated death and disability are to be reduced.[13]

In a study by Bhuyan et al., the majority (68.6%) of the accidents occurred during bright sunny conditions followed by night (23.6%), while in Assam, the accidents reported were maximum (50%) in twilight (light phase of the night), followed by daylight (34%) and dark phase of light (16%). People in the working age range, who are disproportionately male, were the most often injured in RTAs. Most road traffic incidents included only one car, and almost half of the victims were travellers. The highest injury and death rates were seen during the darkest winter months.[14]

Pathak et al. reported most car accidents included motorcycles and other two-wheeled vehicles. Patients' average age ranged from 20 to 30. Forty-seven percent occurred during monsoons. The lower extremities' fracture was the most prevalent type of serious injury, 19.8%. According to the findings, several reasons contribute to road traffic accidents, including the absence of traffic rules in the country.[15]

In a study by Mishra et al., twenty-five percent of the fatalities occurred among the elderly, whereas forty-eight percent of the casualties (15 to 30 years).

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The involvement of ageing automobiles in fatal accidents was a factor in half of all cases. Case mortality rates were 90.90% when the head injury was present at 43.33%. Findings indicate that many causes of RTA and its catastrophic outcomes may be avoided. Most of the risks may be reduced with a thorough, multifaceted strategy.[16]

A study by Tripathi et al. reported that 75% of people in four-wheeled vehicles weren't buckled up when they were involved in an accident. Head injuries were far less common among helmeted people (4.8%) than those among unhelmeted people (23.7%). Nineteen percent of people in two-wheeled vehicles and six percent of those in four-wheeled vehicles were observed driving drunk. According to the findings, Victims of car accidents involving motorcycles and pedestrians tend to sustain different injuries than those who were hit by cars. The hour requirement for road safety is a fast supply of reasonably priced helmets of adequate quality and stringent laws for safety limits.[17]

According to Shah et al., there is a peak in RTA between 6 AM and 12 PM (36.67% of the time). Forty-one percent of the accident victims were unlucky bystanders, such as innocent passengers and walkers. Most patients needed help with dressings (38%), followed by laceration repairs (22%), and then splinting (8%). Bracing (24%), emergency intubation (10%), and implantable cardioverter defibrillators (ICD) (2.66 percent). To effectively manage trauma patients and make the most efficient use of available resources, secondary and tertiary level trauma facilities must be specifically designed to handle such cases and are well prepared to implement a comprehensive triage system.[18]

Sreekrishnan et al. reported thirty-one percent of the people were in their twenties. The majority of patients were from city centres. A staggering 82% of patients were hurt when they were struck by bicycles or motorcycles. Half of the patients with head injuries were among the 16 who did not wear helmets. Trauma is a big health issue in our country, especially among the young. Most road traffic accidents (RTAs) involve people on bicycles or motorcycles.[19]

A study by Kandpal et al. found that while men made up the majority (83.24%), the youngest age groups were the most active. The majority of collisions occurred after dark. Factoring in the Outcomes Most RTI patients fell between the ages of 21 and 30 when the condition was most commonly seen. There were more males than females among the casualties.[20]

CONCLUSION

Since most of the accidents were due to two-wheelers, it calls for measures for dedicated lanes for two-wheelers. In addition, strict enforcement of traffic rules will go a long way in preventing fatal and non-fatal injuries due to road traffic Accidents.

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