

MAGNITUDE AND OUTCOMES OF ROAD TRAFFIC ACCIDENTS IN A TERTIARY CARE CENTRE

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ABSTRACT**BACKGROUND**

Road Traffic Accidents are the eighth leading cause of death. RTAs are the leading cause of death in younger individuals. Every year more than a million people die on the road due to RTAs. Road traffic accident is defined as an incident on a way open to public traffic resulting in one or more persons injured or killed, involving at least one moving vehicle.

Objective of the study is to assess the magnitude and outcomes of road traffic accidents among trauma victims.

MATERIALS AND METHODS

This was a retrospective study conducted in Government Vellore Medical College Hospital, Vellore by analysing the records of Accident Register and case records for the period of January 2015 to December 2015. Totally, 4231 patients were incorporated in this study.

RESULTS

A total of 4231 patients were incorporated in this study, of which 3384 (79.98%) were male and 847 (20.07%) were female. In this study, highest number of RTAs occurred with two-wheeler riders followed by pillion (31.01%, 23.92%). Both constitute to nearly 55%. Of all trauma victims admitted the in hospital, 107 (2.53%) died, 454 (10.73%) survived with long term disability on discharge, 62 (1.46%) referred and 3608 (85.27%) survived without long term disability on discharge.

CONCLUSION

This study was conducted to know the outcome of the patients admitted in our institution and help us to improve the Trauma Care System of our own institution and also to impart the knowledge and practices of road safety measures like appropriate use of pavements by pedestrians and avoiding risky driving behaviours to the community.

KEYWORDS

Road Traffic Accidents, Outcomes.

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BACKGROUND

Accident is an incident occurring suddenly, unpredictably and unintentionally under unforeseen conditions.^[1] Road Traffic Accident is defined as an incident on a way open to public traffic resulting in one or more persons injured or killed, involving at least one moving vehicle. RTAs may be between two or more number of vehicles, between vehicles and pedestrians, between vehicles and animals, or geographical or architectural obstacles.^[2]

Road Traffic Accidents Kill nearly 1.2 million people a year and disabling or injuring about 20-50 million people per year globally, a huge global burden and economic loss.^[3] The report written by WHO in 2013 showed that more than 1.24 million people die every year as a result of road traffic injuries, making it "the eighth leading cause of death globally, and the leading cause of death for young people aged 15-29".

RTAs will become the fifth leading cause of death globally by 2030, if the current trend continues.^[4] Improved life expectancy along with urbanisation are putting heavy pressure in general as well as mainly on road transport system, in the developing world.^[5]

In developing countries, the road traffic related injuries are mainly due to increase in number of vehicles, poor enforcement of traffic safety measures like wearing helmet, lack of knowledge, inadequacy of public health infrastructure.^[6]

MATERIALS AND METHODS

The aim of this study is to assess magnitude and outcome of road traffic accidents among trauma victims. This study conducted as a retrospective study in our institute, Government Vellore Medical College Hospital, Vellore from the period of January 2015 to December 2015. The population included in our study was those who got admitted to our hospital. All victims' case records and accident register were verified and available information prepared as formats for this study. Totally, 4231 patients were included in this study.

RESULTS

In this study, totally 4231 patients' case records and accident register was analysed.

Sociodemographic Characteristics

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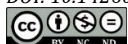
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Totally 4231 patients were included in this study. Among them, 3384 (79.98%) were male and 847 (20.07%) were female. The mean age of the victims was 25.5. The maximum number of victims were between the age group of 20 to 29 (22.41%), followed by 30 to 39 years (18.48%). The place of residence of victims were mostly rural, 2454 (58.01%) patients, followed by urban population (41.99%).

Age (Years)	Male	Female	Total
<10	101 (2.98%)	22 (2.6%)	123 (2.90%)
10-19	402 (11.88%)	84 (9.91%)	486 (11.49%)
20-29	745 (22.02%)	203 (23.97%)	948 (22.41%)
30-39	610 (18.03%)	172 (20.31%)	782 (18.48%)
40-49	586 (17.32%)	147 (17.36%)	733 (17.32%)
50-59	513 (15.16%)	116 (13.7%)	629 (14.87%)
>60	427 (12.61%)	103 (12.15%)	530 (12.53%)
	3384 (79.98%)	847 (20.01%)	4231

Table 1. Sociodemographic Characteristics

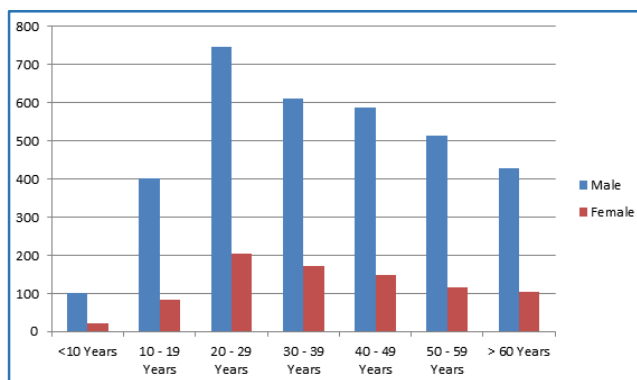


Figure 1. Age and Sex Distribution of Trauma Victims

Urban	1777 (41.99%)
Rural	2454 (58.01%)

Place of Residence

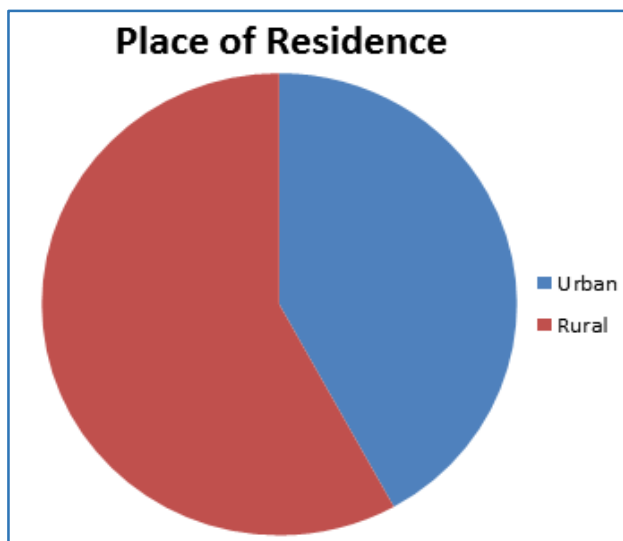


Figure 2. Place of Residence of Trauma Victims

Vehicle	Number of Cases	%
Pedestrian	592	13.99
Bicycle	106	2.51
Two Wheeler Rider	1312	31.01
Two wheeler - Pillion	1012	23.92

Three Wheeler	349	8.25
Four Wheeler	569	13.45
Heavy Motor Vehicles	291	6.87

Table 2. Vehicle Types that caused Road Traffic Accidents and Patient Role at the time of Road Traffic Injury

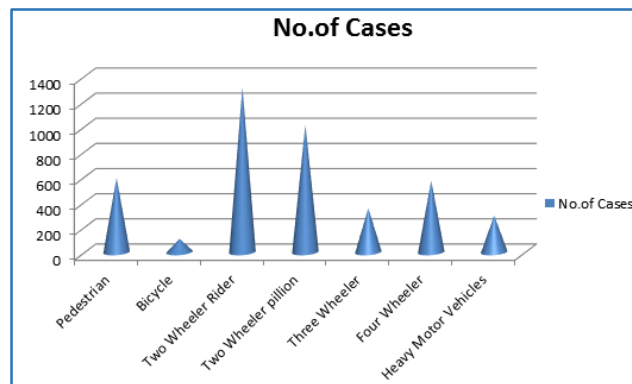


Figure 3. Vehicle Types that caused Road Traffic Accidents and Patient Role at the time of Road Traffic Injury

In this study, highest number of RTA noted in two-wheeler riders followed by pillion (31.01%, 23.92%). Both constitute nearly 55% of all types of vehicular injuries. This is because our district has more number of middle income people, common mode of transport used by them are two wheelers. This study is contrary to some studies done in urban centres.

Outcome	Frequency	(%)
Survival without longterm disability	3608	85.28
Survival with longterm disability	454	10.73
Referred	62	1.46
Died on Discharge	107	2.53
Total	4231	100

Table 3. Outcome of the Trauma Victims

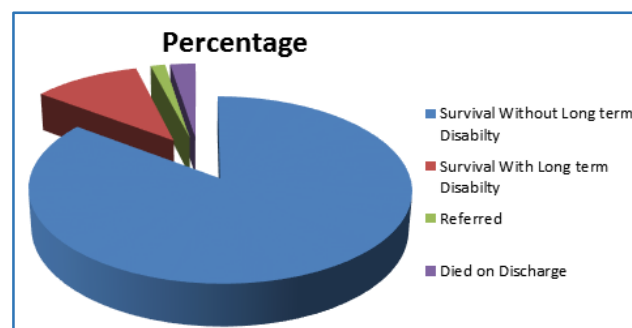


Figure 4. Outcome of Trauma Victims

Of all trauma victims admitted in hospital, 107 (2.53%) died, 454 (10.73%) survived with long term disability on discharge, 62 (1.46%) referred and 3608 (85.27%) survived without long term disability on discharge.

DISCUSSION

The current study revealed that 2463 (58.21%) of the victims were in age group between 20–49 years which is consistent with other similar studies.^[7-9] This study reveals that more number of victims/sufferers were from economically productive age group which leads to economic loss to their family as well as the nation. The study results shows that

males were more commonly affected than females. Because males are the main earning members of the family, they are exposed to the road traffic very often than females due to their nature of work.

In this study, it was found that motorcycles were responsible for the majority of road traffic crashes that is consistent with the study conducted on motorcycle injuries as an emerging public health problem in Mwanza City, north-western Tanzania.^[10] This study is contrary to the study conducted in Buganda Medical Centre in Same area.^[11]

Perceived Barriers of road safety are the cyclists who are exposed to the dangerous behaviours from motor vehicle drivers and also the increased level of stress when the volume of traffic is high. Pedestrians are exposed to high risk while trying to cross the heavy traffic roads, and also at zebra crossings.

The lack of road safety behaviour, lack of infrastructure tends to cause more no. of road traffic accidents. Lack of infrastructure indicates poor roads, not having the proper signals, not having separate bays for vehicles (bus bay, two wheeler bay). Inadequate driving training and road safety knowledge leads to poor driving skills which in turn increases the road traffic accidents. Carrying bulky loads in the vehicles also leads to increase in road traffic injuries.

There is a need to improve traffic system for users of road to avoid road traffic accidents by reducing the risk of human, environmental, and vehicle causes during three phases of a crash event (Pre-Crash, Crash, Post-Crash). Education on road safety, recruitment of skilled drivers and strengthening the Governmental Traffic Acts is very important to reduce the magnitude of road traffic accidents.

Policies for motorcycle riders, community involvement for road safety, severe punishment for breach of traffic rules on road, sensitisation and mobilisation of proper use of the roads, regular servicing of the cars/motorcycles, restricting use of cell phones while driving will change and reduce the magnitude and occurrence of road traffic accidents in our district.

CONCLUSION

In our institute, most number of trauma related admissions are due to road traffic accidents. RTA victims were predominantly male and people aged 20–49 years.

Most of them are from urban areas. Patients from rural areas more commonly presented. Motor vehicle injuries were most common cause of injury. The most common victims are two-wheeler riders and pillion riders.

This study was conducted to know the outcome of the patients admitted in our institution and help us to improve the Trauma Care System of our own institution and also to impart the knowledge and practices of road safety measures like appropriate use of pavements by pedestrians and avoiding risky driving behaviours to the community.

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