An Exploration into the Biography of Road Traffic Accident Cases in a Tertiary Care Hospital in South India

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Abstract

Introduction: RTA is the public health issue and cost a lot to individuals, families, communities and nations as injuries and deaths due to road traffic accidents (RTA) are a major public health problem in developing countries.

Objectives: The present study was carried out with the objective to find out the profile of RTA cases in a tertiary care hospital in South India in one year.

Methods: A retrospective analytical content based analysis was made on 549 RTA cases recorded in a tertiary care hospital in South India in one year from June 1st 2017 to May 31st 2018 and the results were tabulated.

Results: Of the 549 cases, 409 cases were males and 140 were females of which head injury with 182 cases (29.50%) forms the majority of the injury followed by orthopaedic injuries with163 cases (26.04%).

Conclusion: This study thus analyses various aspects of RTA with head injury being the most common and and its various confounding factors which shows that there is clearly a need for road safety education particularly targeting student community.

***Key words**: RTA; Head injury; Epidemic; Students; Road safety.*

Introduction

Globalization has led to the expansion in the road network along with rise in motorization of vehicles. Simultaneous population explosion and rapidly increasing use of motor vehicles has led to rise in the number of road traffic related accidents, road accident injuries and fatalities[1]. Death from road traffic accidents (RTA) and in particular Motor vehicle Traffic Accidents have been characterized worldwide as a hidden epidemic which affects all sectors of society[2] . RTA is the public health issue and cost a lot to individuals, families, communities and nations.

Injury and deaths due to road traffic accidents (RTA) are a major public health problem in developing countries where more than 85% of all deaths and 90% of disability-adjusted life years were lost from road traffic injuries[3]. The statistical profile reflects a global estimate of 5.1 million deaths in 2000, which was due to injuries that accounted for 10% of deaths due to all causes. Out of this a quarter of injury-related deaths occurred in the South-East Asian region[4].

As a developing country, India is no exception. Not a day passes without RTA happening in the roads in India in which countless number of people are killed or disabled. The data for fatal accidents presented to the Parliament by the Ministry of Road Transport and

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Highways for year 2008 shows that 119,860 people perished in mishaps that year and the national and state highways accounted for nearly half of all road accidents. Deaths due to road accidents in 2009 were reported to be 126,896 and in 2010 it increased to 133,938 which is about 5.5% over and above the previous year's deaths[5].

The reasons for the high burden of road traffic injuries in developing countries are increase in the number of motor vehicles, poor enforcement of traffic safety regulations, inadequacy of health infrastructure, and poor transport facility[3]. Road crashes deserve to be a strategic issue for any country's public health and can lead to overall growth crisis, if not addressed properly[6]. In spite of recent advancement of technology in the field of medical sciences, death and deformities due to all causes, are yet to be controlled successfully; rather incidences of road traffic accidents has been increasing at an alarming rate throughout the world[7]. If the current trends continue, the number of people killed and injured on the world's roads will rise by more than 60% by 2020[8]. Hence, this study aims to provide an insight into the road traffic accidents reported to a tertiary care hospital in South India, probably covering the data from south Indian population.

Method

A total of 549 RTA cases were studied that was recorded in one year from June 1st 2017 to May 31st 2018 in a tertiary care hospital in South India. It was a retrospective analytical study with secondary data obtained from the Medical Records Department in the hospital. It was a based on content analysis where a proforma was formed related to the nature and details of the RTA cases that was used to obtain the data.

All age group registered with RTA cases and treated in the hospital were included in the study. Unregistered cases and cases that were sent for further referral from the hospital were excluded from the study. The data was analysed and results were tabulated using simple tables and pie charts. Percentage calculations were made for better statistical reporting.

Results

Of the 549 cases, 409 were males and 140 were females accounting for 74.49% and 25.51% respectively. With regards to age distribution, 33 cases(6.01%) under 15 years of age, 170(30.96%) cases from 16-30 years of age, 141(25.68%) cases from 31-45 years of age, 135(24.59%) cases from 46-60 years of age and 70(12.75%) cases over 60 years of age.

With regard to time of incident, 60 cases (10.92%) occurred before 8am, 220 cases(40.07%) from 8am-4pm and 269 cases(48.99%) from 4pm-12pm. Various injuries that occurred in the RTA cases are tabulated in Table 1. The duration of hospital stay was divided into 3 categories: 238 cases stayed less than 5 days, 170 cases stayed between 6-10 days and 100 cases were hospitalised more than 10 days.

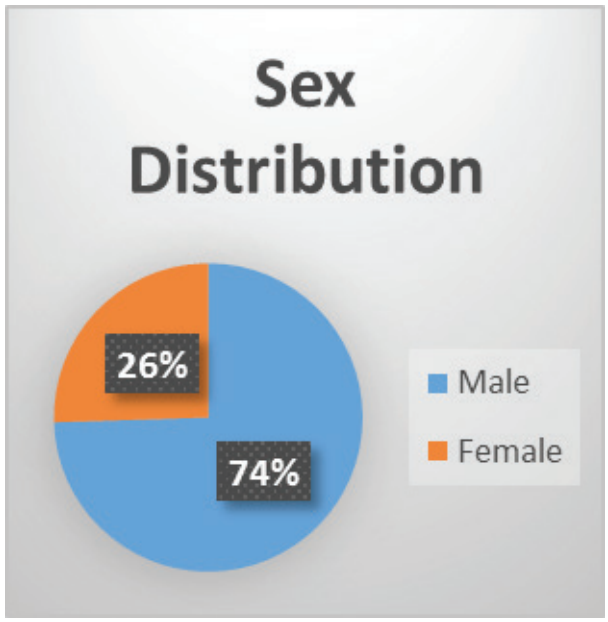
The time lapse between incident and admission in hospital is tabulated in Table 2. Among the 549 cases, 544 were alive and 5 were dead due to treatment failure and 9 cases discharged against medical advice. On the grounds of occupation, 67 cases(12.20%) among professionals, 92 cases(16.75%) among labourers, 81 cases(14.75%) among housewives, 155 cases(28.23%) among students, 42 cases(7.65%) among retired, 61 cases(11.11%) among unemployed, 51 cases(9.28%) among children under 15 years of age were reported. Pie charts 1 and 2 are given to depict the sex distribution and the occupational distribution of poisoning respectively.

Table 1: Injuries occurred in RTA

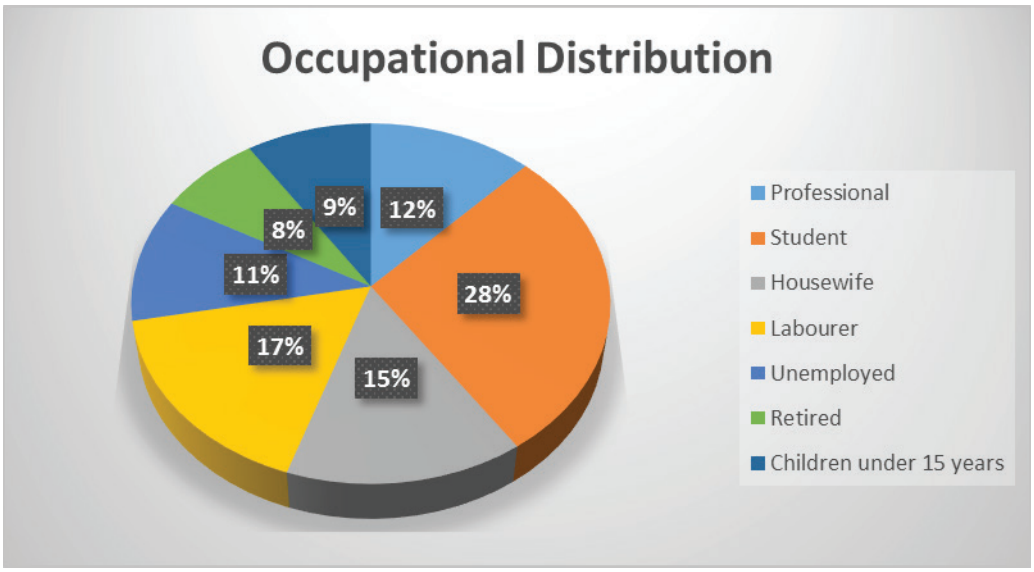
Injuries	Number of cases
Head injuries	182 (29.50%)
Chest injuries	10 (1.82%)
Facial and eye injuries	26 (4.73%)
Limb injuries and fractures	163 (26.04%)
Abdomen and pelvic injuries	37 (6.73%)
Minor injuries	149 (27.14%)
ENT injuries	2 (0.03%)

Table 2: Time lapse

Time lapse	Number of cases (%)
Less than 1 hour	137 (24.95%)
1-6 hours	342 (62.29%)
6-12 hours	49 (8.92%)
>12 hours	21 (3.82%)



Pie chart 2: Occupational Distribution



Pie chart 1: Sex distribution

DISCUSSION

William Haddon (Head of Road Safety Agency in USA) has pointed out that road accidents were associated with numerous problems each of which needed to be addressed separately[9]. 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[10].

In our study, there was a male preponderance similar to the study done in Delhi[11] and it is due to greater male exposure on urban streets and predominance of male drivers in Indian roads. Also maximum number of cases were recorded in the age group of 16-30 years- the most active and productive years of life similar to a study done by Henricksson et.al[12]. Tendency of this age group to show scarce attention to traffic rules and regulations and nonuse of safety devices such as helmets, seatbelts, restraints, and so on, can be a possible explanation for the same. This reveals that the most active and productive age group of population are affected in RTAs, which poses a serious economic loss to the community[13].

This is in accordance with higher incidence among students in our study (155 cases) similar to an epidemiological study done in South India[14]. The road accidents are happening most often due to the reckless and speedy driving of the vehicles, not obeying or following traffic rules[15] and the adventurous nature of the youth are the main factors behind rise in RTA among student population. The next major affected group is labourers- the reason may be that the labourers travel in trucks carrying bricks, sand and other heavy materials. It is interesting to note that among the type of motorized vehicles trucks were involved in the highest number of accidents, and labourers often travelled in the truck as part of their work[10]. Housewives are affected as they most often travel as pillion riders with their spouse.

Most number of cases occurred post 4pm which is similar to study done by Nilambar et.al[16]. These hours are the busiest as commuters go to and return from the schools, offices, factories and business place. Among the injury profile, head injury remains the most common injury similar to study done in Mangalore[17] which shows the lack of awareness of safety equipments like helmet or wearing a seat belt in a car etc. This was followed by fractures in limbs (163 cases) more commonly seen with two wheeler riders as they tend to fall outwards and stretch their arms or legs. Facial injuries are almost always grievous injuries which may require the treatment of plastic surgery. Minor injuries like abrasions, sprains, contusions are treated with bandages and simple medications.

The time lapse is crucial in RTA because the first hour is crucial in trauma management as cases reaching more than one hour are subjected to more severe morbidity and mortality[18]. Majority of cases were addressed with a time lapse of 1-6 hours (342 cases) in our study. A positive linear trend as well as logarithmic trend was observed with delay in admission to the hospital and severity of outcome[19]. So an effort should be made to provide timely and proper medical services to RTA victims via mobile emergency services, quality trauma centers and proper rehabilitation services. This was evident in our study as 5 cases died due to late admission in the hospital. 9 cases were discharged against medical advice due to lack of adherence, affordability, disbelief in the treatment of the doctor etc.

Human factor contribute significantly to increasing number of road accidents in India. Most drivers continue to be acting like maniacs in a tearing hurry and error in judgment often leads to major accidents. Reckless driving, over speeding, decline to follow traffic rules, and drunken driving are main reasons for road accidents. Small bars along the Indian highways are of prime concern to control drunken driving. India has laws to check the drunken driving but its effective implementation is still to be worked upon.

Realizing this serious Public Health Issue happening globally, the WHO in 2004 came out with a theme of "Road Safety is No Accidents" to highlight the urgency to tackle the issue on a priority basis[20]. Prevention of RTA is a responsibility of various agencies and a multi-disciplinary approach will effectively reduce the incidence of RTA and reduction in injuries and deaths on the roads. "Road Safety Week" is observed throughout the country every year in the month of January in order to highlight and emphasize the need for safe roads by taking up activities to promote the concept[21].

Measures promoting safe driving behavior such as mobile usage, eating, inadequate attention, fatigue, negligence; maintenance of vehicle condition; adequate protection including abs, helmets, safety, and others; promoting licensed vehicle and coping skills when integrated with efficient and effective legislation of traffic regulation and maintenance and implementation by legislation (whose absence has been the influencing factor for increased number of RTA among youths) are bound to have a more pronounced positive effect. Protection is needed for three main vulnerable groups—pedestrians, who in urban areas constitute up to 70% of the fatalities; passengers commuting on buses, trucks, and minibuses, who constitute the next largest population group affected; and cyclists. Addressing the risks of these three groups will require multiple policy initiatives[22].

Conclusion

This study thus analyses various aspects of RTA with head injury being the most common and and its various confounding factors which shows that there is clearly a need for road safety education and it should be directed towards road users, who are frequently involved and injured in RTAs (e.g. students). India's Motor Vehicles Act lagging far behind the needs of a fast-motorizing society is painfully evident from its road safety record. the Bill for creation of a statutory National Road Safety and Traffic Management Board must be speeded up- such an agency is vital to set standards

for road design, inspect existing roads, and investigate accidents scientifically. But strict implementation of traffic rules and stringent punishments alone will not solve the persisting crisis. Change in the mind set of riders and drivers and road users realizing their responsibilities alone will bring about a change. Further large number of prospective studies should be carried out that would assist various organizations to set various causative risk factors, circumstances, chain of events; and the preventive measures accordingly to bring down the incidence of not only RTA but all medicolegal cases and shaping the future generation and society more towards being more humane and reaching the goal of World Peace.

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Ethical Clearance: Yes

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