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Sociodemographic Profile and Pattern of Injuries of Poly Trauma Cases of Road Traffic Accidents in a Tertiary Care Center

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Abstract:- Trauma , a cause of morbidity and mortality in India is increasing at an alarming rate. Injuries are accountable for about 3.7% of all society health costs. The study was aimed to determine the magnitude and characteristics pattern of injuries in polytrauma cases of Road traffic accidents and to identify the associated risk factors. The retrospective study group consisted of all the polytrauma Road Traffic Accident victims reporting to Emergency Department of SMCH from 1st January 2018 to 31st December 2018.In this study a total of 2438 cases were included ;out of which 593 were polytrauma cases accounting for 24.3% of the total cases. Males were the most commonly involved. Around 84.4% of the cases involved 2 wheeler accidents. 61.7% of the accidents took place between 3PM to 9PM. Commonly involved age group was from 16-30 years. 9% showed head injuries but majority had injured their extremities (76.39%) of the cases. The need of the hour is to embed road safety measures in the School curriculum and to create more awareness regarding amongst the youth . More advancement is required in the field of automotive safety. More involvement of Traffic police, NGOs and other public awareness groups are required to enforce this.

Keywords:- *Accidents, Awareness, Injury, Trauma, Demography,Vehicle.*

I. INTRODUCTION

A road traffic accident (RTA) is any injury due to crashes originating from, terminating with or involving a vehicle partially or fully on a public road. It is predicted that road traffic injuries will move up to the 3rd place by the year 2020 and by 2030 road traffic deaths will become the fifth leading cause of death (from 8th position) causing global disease burden. [1,2]

Road traffic injuries are the 8th leading cause of death globally and more prevalent in the important age group of 15–29 years**.** Accidents are just not because of incompetence, but are due to carelessness, thoughtlessness and over confidence. The morbidity is particularly high in India mainly because of our rapidly motorizing economy with poor or under developed roads with lack of proper road infrastructures and other safety needs on roads. WHO report says that more than a million people die each year on the world's roads and the cost of dealing with these consequences of these incidents runs to crores of rupees. [2]

Road traffic accidents (RTAs) are a rising problem worldwide accounting for around 1.2 million deaths and over 50 million injuries annually. About two third of these RTAs are in the third world countries. It is expected that by the year 2020 they will rank third in the Global Burden of Diseases. India has just 1% of the total vehicles in the world but it contributes to 6% of the global RTAs. Estimates suggest that Delhi has the highest number of road crash fatalities in India. This lack of attention to road safety issues further adds to the load of problems of road traffic injuries and need public health concerns. Thus reducing the epidemic of accidents.[3]

This study was planned to understand the major causes/risk factors as well as nature, type and mode of occurrence of road traffic accidents in and around the areas of our hospital Saveetha Medical College, Thandalam, Chennai.

II. MATERIALS AND METHODOLOGY

This is a retrospective cross sectional study. The data was collected from the Accident Register logs available at the department of medical records, Saveetha Medical College, Thandalam, Chennai. The study period was from January 1st, 2018 to December 31st, 2018. 593 cases of polytrauma from a total of 2438 RTA cases were scrutinized for Sociodemographic and injury pattern. These compiled data was then analyzed using appropriate statistical tests.

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III. RESULTS

There were a total of 2438 cases, out of which 593 cases belonged to polytrauma (24.32%). 70.4% were males and 29.5% were females victims. The most commonly involved age group was 16-30 years accounting to 36.76 % of polytrauma cases followed by 31-45 years which accounts for almost 31.19% cases. The maximum sex differentiation ratio was found in the age group between 31-45 Years (4.9:1). **(Table 1)** 73% of the cases were village residents and 79% of the cases occurred in the national highway. The timings between 3PM to 6PM showed the highest number of cases accounting to 61.7% of the cases followed by 26.0% of cases between 6PM to 9PM. **(Fig 1)** The two wheeler accidents accounted for 84.4% of the total polytrauma cases followed by that due to 3 wheeler accidents (7.2%) **(Fig 2).**The injuries to the extremities (76.39%) were most commonly seen. Head injury along with other regions were noted in 17.38% of the total cases. **(Fig 3)**

IV. DISCUSSION

593 out of 2438 cases belonged to polytrauma (24.32%). 70.4% were males and 29.5% were females victims. More than 2/3rd of the cases belonged to the working age group (16-45 years) accounting to 67.95% of cases. The main reason could be that male are bread winners in rural areas and are exposed more frequently to outdoor work than females. This is in accordance with studies conducted by various authors.[1,4-6]

Maximum victims belonged to rural areas with cases noted in the highway between 3PM-6PM and 6 PM to 9 PM. Poverty, unemployment and urbanization could be the driving force for the people to move out of their homes n search of jobs.Similar findings were noted in studies done in north India .[6]

Two wheeler accidents (84.4%) amounted to the major burden in this study. The sales of 2 wheelers in India have reached 20 million mark in 2018 which is doubled as compared to the sales in 2010. The main factor is the rapid urbanization of our cities. Bike population is India is second in the world after China. Since two wheelers are easier to drive in the Indian traffic people seem to opt for two wheeler driving and the roads are very unevenly laid which also is one of the cause for RTA . Teens with their bodies fully pumped with hormones making them indulge in various dangerous activities like speeding, not following traffic lights and entering wrong ways. [3-9]

Injuries to the limbs (76.39%) were most commonly seen. This could be explained with the soaring numbers of two wheeler injuries where the riders usually tend to fall down side ways and injure their arms and legs rather than abdomen or back. Head injuries along with other areas accounted for 17.38 % cases and were also fatal injury (12.38 % cases). Most of which were either because they didn't have the helmet or it was a case of drunken driving. [4-6]

V. CONCLUSION

Young Males seemed to be the ones who were most commonly affected and the vehicle involved were mainly two wheelers. Traumas to the extremities were very commonly seen .Head injury was the most common fatal injury.

A collective effort from good governing bodies,NGO's, Schools and community with better implementation of traffic policies and good roads would help in curbing down this menacing issue worldwide.

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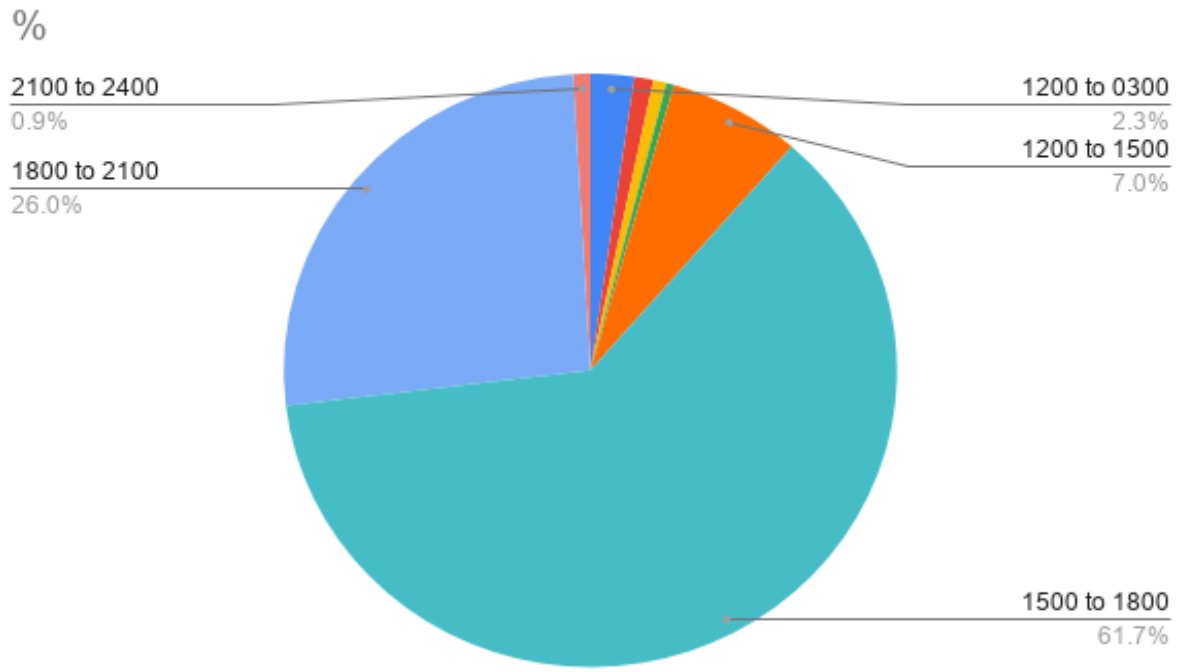

Fig 1:- Time of Occurrence of Accident

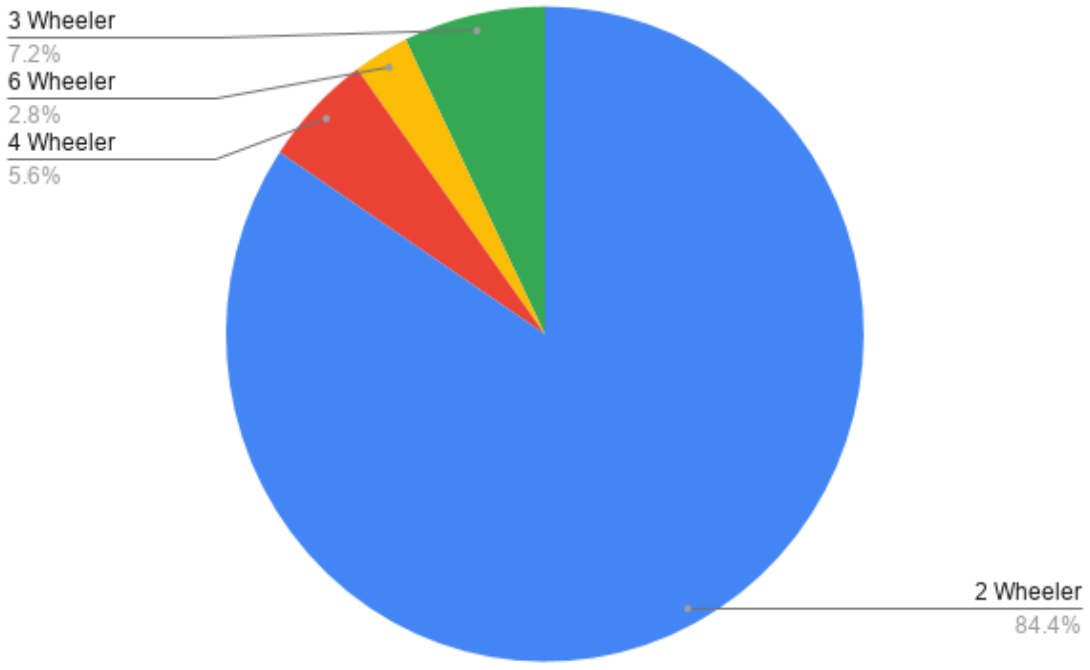

Fig 2:- Vehicle Involved

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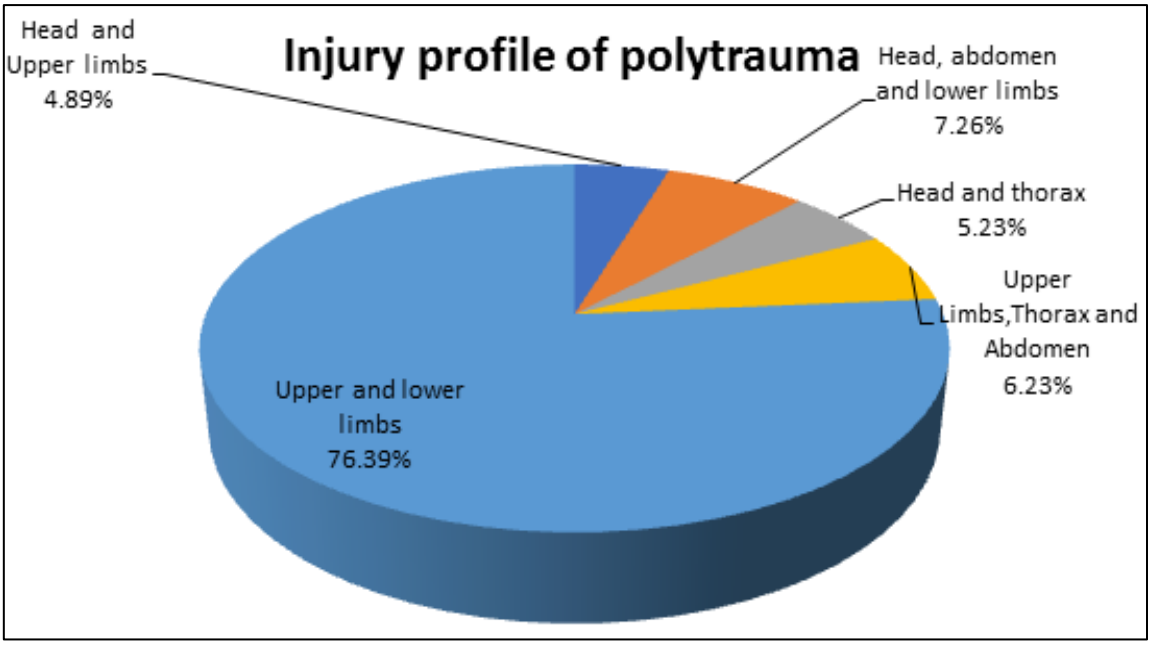

Fig 3:- Injury Profile of Polytrauma

Age (in years)	Male	Female	Ratio
1-15	9 (1.5%)	2 (0.3%)	4.5:1
16-30	156 (26.33%)	62 (10.5%)	2.5:1
31-45	154 (25.92%)	31 (5.2%)	4.9:1
46-60	89 (15.01%)	56 (9.4%)	1.5:1
61-75	10 (1.64%)	24(4.1%)	0.41:1
Total	418 (70.4%)	175 (29.5%)	2.3:1

Table 1:- Age and Sex Related Data