CHAPTER-I

INTRODUCTION

India is one of the developing country in the world. Industrialization and urbanization are putting heavy pressure on transportation. One of the unwanted side effect of growth in transportation is road accidents. As a result there is a drastic increase in death and injuries from Road Traffic Accidents. Among all types of accidents, those caused by motor vehicles claim the largest toll of life and tend to be most serious. Accidents constitute a complex phenomenon of multiple causation. The etiological factors are classified into human and environmental factors. The important human factors could be lack of adequate traffic planning and consumption of alcohol.

A patterned injury is one which has a distinct pattern that may reproduce the characteristics of the object causing the injury. The pattern may be caused by impact of a weapon or other object on the body, or by contact of the body with a patterned surface The injury patterns formed from accidents have great medico legal importance. The forensic pathologist resolves collections of injuries into recurring patterns which can be used to suggest the means by which such injuries occurred. There are no defined criteria which can be used to provide objective evidence for a diagnosis and the process is usually performed with a minimum of scene information. Fortunately in the vast majority of cases these patterns are intuitive and not contentious. A common example is the collection of abrasions, bruises and lacerations to one plane of the face when an individual suffers sudden unconscious collapse forwards onto a hard surface.

Motor vehicle accidents are a major cause of both internal and external wounds, many of which cannot be treated with simple dressings - if at all. Coupled with a logical sequence for the initial assessment and management of trauma patients, has been shown to contribute to improved outcomes. However, for there to be any significant reduction in the worldwide burden of motor vehicle-related trauma, injury prevention strategies are needed; prevention being better than cure.

Injuries due to road traffic accidents rank 4th among the leading causes of death in the world. It is estimated that 2.1% of the global mortality are caused by Road Traffic Accidents. A larger share of this is borne by the developing countries where in 85% of the deaths are due to road traffic accidents. India accounts for around 10% of the fatalities due to road traffic accidents worldwide.30.2% of natural and unnatural deaths were due to road traffic accidents in India. This number may not be exact and may increase because most of the times, the deaths die to road traffic accidents are not recorded. Some of the important factors for fatalities in road traffic accidents is the increase in motor vehicles, increase in population and poor access to health care. The most vulnerable part of the body which is affected by the road accidents is the head. A

head injury is defined as a morbid state resulting from the gross or subtle changes in the scalp and \ or the contents of the skull, produced by mechanical sources. In India, since the two wheelers contribute to the major portion of the traffic, these are the more common causes of accidents. This study was therefore done to observe the incidence of vehicular trauma and the pattern of injuries.

Motor vehicle-related injuries can be arbitrarily divided into:

- Collision between the victim and the external environment (the vehicle, or a stationary object if the occupant has been ejected)
- Acceleration or deceleration forces acting on the victim's internal organs

In a frontal collision, the unrestrained occupant of a vehicle continues to move forward as the vehicle comes to an abrupt stop. This forward motion is arrested as the patient connects with the, by now, stationary vehicle chassis. The initial impact point is often the lower extremities ,resulting in fracture/dislocation of the ankles, knee or hip dislocations and femoral fractures. As the body continues moving, the head, cervical spine and torso impact on the windscreen and steering column.

In a lateral impact, the victim is accelerated away from the side of the vehicle. Compressive pelvic injuries, pulmonary contusion, intra-abdominal solid organ injury and diaphragmatic rupture are common. Rear impacts also accelerate the victim; if head restraints are incorrectly fitted, the inertia of the head makes the cervical spine vulnerable to injury. Ejection from a vehicle is associated with a significantly greater incidence of severe or critical injuries.

1.1 Deceleration and acceleration injuries:

Such injuries occur when differential movement occurs between adjacent structures; for example the distal aorta is anchored to the thoracic spine and decelerates much more quickly than the relatively mobile aortic arch. Shear forces are generated in the aorta by the continuing forward motion of the arch in respect to the distal thoracic aorta. Similar situations occur at the renal pedicles, the junction of the cervical with the thoracic spine and also between the white and grey matter within the brain. The use of a three-point lap-shoulder seat belt is thought to reduce the risk of death or serious injury for front-seat occupants by approximately 45%

1.2 Head injuries:

A head injury is any sort of injury to your brain, skull, or scalp. This can range from a mild bump or bruise to a traumatic brain injury. Common head injuries include concussions, skull fractures, and scalp wounds. Head injuries may be either closed or open. A closed head injury is any injury that doesn’t break your skull. An open

(penetrating) head injury is one in which something breaks your scalp and skull and enters your brain.

There are two major categories of brain injury: focal injuries and diffuse injuries. Focal brain injuries are usually caused by direct blows to the head, and comprise contusions, brain lacerations, and hemorrhage leading to the formation of hematoma in the extradural, subarachnoid, subdural, or intracerebral compartments within the head. Diffuse brain injuries, are usually caused by a sudden movement of the head.

1.3 Thoracic Injuries:

A thoracic injury, also known as chest trauma, is any form of physical injury to the chest including the ribs, heart and lungs. Chest injuries account for 25% of all deaths from traumatic injury. Typically chest injuries are caused by blunt mechanisms such as motor vehicle collisions or penetrating mechanisms. Six immediately life-threatening injuries related to the airway and the chest:

- Simple pneumo/haemothorax
- Aortic rupture
- Tracheobronchial rupture
- Pulmonary contusion
- Blunt cardiac injury
- Diaphragmatic rupture

The present project was therefore conducted to study the incidence of vehicular accidents and patterns of injuries occurred during 2019 in Kozhikode district. Statistical study has been carried out regarding the various epidemiological, medico-legal aspects of vehicular accidents, making an attempt to establish various causative factors, pattern and distribution of injuries and thereby to plan successful measures against it. Kozhikode is a district in Kerala which consist of 30.86 Lakhs population as per Census 2011. It consist of 14.71 Lakhs of males and 16.15 lakhs of females. Total area consist of 2345 km^2 . District consist of 2747 km (approximately) of road which consist of all roads except rural roads.

CHAPTER-II

LITERATURE REVIEW

2.1 Arvind Kumar et al. (2008) in depth studies of fatal vehicular accidents provide valuable data for implementing effective emergency services to reduce the trauma related mortality and strengthening legal measures in peak hours of fatal accidents. We aimed to study, pattern of injuries especially fatal traumatic brain injuries occurring in vehicular accidents. Post-mortem reports and clinical records of victims of road traffic accident autopsied during the period of 2001-2005 at Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences, New Delhi, were analysed retrospectively. Out of total 7008 medico legal autopsies conducted during the study period, 2472 (35.27 %) were of vehicular accidents. The male/female ratio was 7.49:1. Commonest age group affected was between 21-40 years involving 1341 (54.24%) cases. Pre-hospital mortality was in 985 (39.84 %) cases. Fatal traumatic brain injuries were seen in 1699 (68.73%) cases. Skull fractures were found in 1183 (69.63%) cases of head injury; most common bone fractured was temporal bone (n=559, 47.25%). The commonest variety of intracranial haemorrhage was subdural haemorrhage (n=1514, 89.11%). The craniotomy was done in 297 (17.48%) cases; maximum mortality (41.07%) was seen within 4-14 days. Most commonly injured abdominal organ was liver (n=532, 21.52%). No significant difference was evident in incidence of fatal vehicular accident on weekends and weekdays. However November month took maximum toll of deaths (n=273, 11.04%) of total vehicular accident fatalities in five year duration. 53.20% of fatal accident occurred between 6 PM and 6 AM. The results of study emphasize the need to improve the pre hospital care with provision of trauma services at site and to establish neurosurgical facilities with trauma registry.

2.2 Nilambar Jha et al. (1994) performed a study in Jawarhalal Institute of Post Graduate Medical Education and Research Hospital, Pondicherry to know the prevalence of injuries present among the road. traffic accident cases. The participants of the study were 726 victims of road traffic accidents reported in one year (1994). Among 726 road traffic accident victims, 603(83%) were males and 123(17%) females. The average age was 31.5 years and highest number of victims were in age group 20-29 years. Among the various injuries, the limbs and the face were the commonly affected areas to suffer external injuries. Head injuries were the commonest form of internal injuries seen in the victims (34.1%). These injuries were common among bicycle riders, pedestrians and riders of motorized two wheelers. The commonest sites for fracture was the lower limbs (43.4%). The severity of injuries suffered by the victims was graded according to the 'Trauma Index'.

2.3 Dr. Harnam Singh and Dr. S.K.Dhattarwal (2000 – 2001) studied pathological features of the cases as type of injury, pattern and distribution of injuries, body parts involved, fatal injuries and cause of deaths were noted at the actual autopsy examination of victim. All the data thus collected was analyzed statistically. 450 cases of fatal road traffic accidents brought to mortuary of Department of Forensic Medicine, PGIMS, Rohtak during one year period 20.05.2000 to 19.05.2001 comprised the material for the present study. Various demographic and epidemiological characters related to victim's accidents were gathered from police records or by direct interrogations of the police officials, or relatives and friends of deceased accompanying dead bodies. The pathological features of these cases as type of injury, pattern and distribution of injuries, body parts involved, fatal injuries
and cause of deaths were noted at the actual autopsy examination of victim. The result of this study is 450 fatal road accidents which occurred during one year period, constituted 29.8% of total medicolegal deaths autopsied (1510) during same period.

2.4 Supriya Satish Patil et al. (2003 – 2004) conducted a study in Krishna Hospital and Medical Research Centre (KH and MRC), by the Department of Preventive and Social Medicine from May 2003 to 30 April 2004. This hospital is attached to Krishna Institute of Medical Sciences Deemed University, Karad, Maharashtra. All road traffic injury cases admitted during above one-year period were studied and analyzed. The patients admitted with delayed complications of road traffic injuries were not included in the study. Data were collected everyday by the candidate either in the casualty or in the wards of KH and MRC. A pretested proforma specially designed for this purpose was used for interviewing the study subjects. Where condition of victims did not warrant the interview, the relatives or attendants were interviewed. During the interview, purpose of study was explained to each respondent. Case-sheets of the victims were referred for cross-checking. The information collected consisted of personal identification data, history of road traffic injuries, which included human and environmental risk factors and clinical history and examination, the type and severity of injury suffered by the victims was graded using the "trauma index". The treatment given and the outcome were also recorded for each case.

2.5 Sanjay KumarSingh (2016) conducted a study in which the aim is to analyze the road accidents in India at national, state, and metropolitan city level. Analysis shows that the distribution of road accidental deaths and injuries in India varies according to age, gender, month and time. Age group 30 - 59 years is the most vulnerable population group, though males face higher level of fatalities and injuries than their female counterparts. Moreover, road accidents are relatively higher in extreme weather and during working hours. Analysis of road accident scenario at state and city level shows

that there is a huge variation in fatality risk across states and cities. Fatality risk in 16 out of 35 states and union territories is higher than the all India average. Although, burden of road accidents in India is marginally lower in its metropolitan cities, almost 50% of the cities face higher fatality risk than their mofussil counterparts. In general, while in many developed and developing countries including China, road safety situation is generally improving, India faces a worsening situation. Without increased efforts and new initiatives, the total number of road traffic deaths in India is likely to cross the mark of 250,000 by the year 2025. There is thus an urgent need to recognize the worsening situation in road deaths and injuries and to take appropriate action.

2.6 O.N. Obuekwe, M. A. Ojo, O. Akpata and M. Etetafia (2000) documented the aetiological factors and the frequency of maxillofacial injuries due to road traffic accidents. Over a six-month period, 312 patients with facial trauma due to road traffic accidents were prospectively studied. The demographic parameters, the cause of the road traffic accidents, the vehicle type, the use of seat belts, helmets, and other safety devices were recorded. Distribution of maxillofacial bone and soft tissue injuries by vehicle type as well as associated injuries were documented. The minibus was the vehicle type most often involved (36.2%) and tire blowout (21.2%) was identified as the most common contributory factor. Males 117 (37.5%) in the 21 – 30 year- age range were most often involved. The forehead was most often the site of soft tissue injury (37.3%) while the mandible was the facial bone most often fractured (29.2%). Head injury (55.8%) was the commonest associated injury. The low utilization of safety devices like seat belts and air bags as well as the absence and non enforcement of road traffic legislation were identified as a etiological factors.

2.7 Zaka U Khan et al . (2010) reported the pattern of injuries from high speed road traffic accidents in the Southern Region of Saudi Arabia. In this prospective criteria based one year study; data was collected upon arrival of patients to the accident and emergency department. The patients were grouped into two, with fractures (Group-1) and without (Group-2). A total of 1513 patients were included, 628 in Group-1 and 885 in Group-2. There were 1356 male and 157 female patients in total. Majority were in the younger age group, drivers and front seat passengers. Fewer were using restrains and more reported driving with high speeds in group-1 compared to group-2. Most accidents occurred during 12:00 hrs to 24:00 hrs in both groups. Although most of the causative factors of Road traffic accidents in this region of Saudi Arabia are similar to the rest of the world; some remain unique to the region.

2.8 Richard Mayou and Bridget Bryant (2002) aimed to describe the immediate and later physical, social and psychological consequences of a road traffic accident for vehicle occupants, motorcyclists, cyclists and pedestrians amongst consecutive hospital

attenders at an Accident and Emergency Department. Physical and accident details were collated from hospital records. Subjects completed questionnaires at hospital attendance, 3 months, 1 and 3 years. There were 1148 respondents from 1441 consecutive attenders over a 1-year period. The main outcome measures were self-report physical status, standard measures of post-traumatic stress disorder, mood, travel anxiety and health status at 3 months, 1 and 3 years. There were marked differences in injury pattern and immediate reaction between road user groups. Pedestrians and motorcyclists suffer the most severe injuries and report more continuing medical problems and greater resource use, especially in the first 3 months. There were few differences in psychological or social outcomes at any stage of follow-up. Despite differences between the road user groups in their injuries, immediate reactions and treatment, there were few longer-term differences. A third of all groups described chronic adverse consequences which were principally psychological, social and legal.

2.9 Douglas Bowley and Kenneth Boffardd (2002) studied that Motor vehicle accidents are a major cause of both internal and external wounds, many of which cannot be treated with simple dressings - if at all. In this article the authors discuss the importance of recognizing the typical patterns of injury associated with . This, coupled with a logical sequence for the initial assessment and management of trauma patients, has been shown to contribute to improved outcomes. However, for there to be any significant reduction in the worldwide burden of motor vehicle-related trauma, injury prevention strategies are needed; prevention being better than cure. And the conclusion is The first human fatality associated with a motor vehicle was a pedestrian killed in 1899 [5]; since then the patterns of injury from man's interaction with the motor car may have been somewhat modified by crash protection devices, such as helmets, seat belts and air bags, but injuries due to road traffic related trauma are worsening each year. Injury is the leading cause of death among young adults in the western world and trauma is imposing an increasingly severe burden on the health infrastructure of the developing world. The use of motor vehicles is growing worldwide; a particular concern in emerging nations where increasing urbanization, overcrowding and scant regard for the 'rules of the road' are the norm. A recognition of the typical patterns of injury coupled with a logical sequence for the initial assessment and management of trauma patients will contribute to reductions in mortality and morbidity; however, the most significant impact on reducing the worldwide burden of motor vehicle-related trauma will come from injury prevention programs organized at societal and governmental levels.

2.10 Abdulhameed Ali Al-Thaifani et al.(2016) conducted a study to analyse road traffic accidents in Sana'a city, Yemen, during 2013–2015. Methods. The required information and data of accidents were collected, respectively, from police reported road accident statistics, Sana'a city. 11684 cases of road traffic accidents during period

2013–2015 were studied. The result was 840 people were killed and 9760 people were injured in RTAs during 2013–2015 in Sana'a city. The accident rates per 100000 of the population were 234.8 in 2013, 180.3 in 2014, and 92.2 in 2015. Mortality rates per 100000 of the population were 15.17 in 2013, 12.2 in 2014, and 8.9 in 2015. High speed was the single most important factor responsible for accidents, deaths, and injuries accounting for 38.1% of road traffic accident followed by drivers' fault accounting for 18.9% of the total road traffic accidents. The most common age group involved was ≥18 years. Males accounted for 83.1% of killed and injured persons. Most frequent victims of road traffic accidents were vehicles motor (48.9%) followed by pedestrians (38.1%). More than half of road traffic accidents occurred on the straight road. road traffic accidents are a major source of public health concern in Sana'a city, Yemen. Preventive measures to reduce the burden of mortality and morbidity due to road accidents should be introduced.

CHAPTER 3

AIM AND OBJECTIVES

3.1 AIM: To study about the injury patterns among road traffic accident cases for the analysis of; Different types of injuries on the basis of type of vehicle like two wheelers, three wheelers, four wheelers, heavy vehicles, crane and other vehicles. Prevalence of injuries can be also studied like; Most occurred type of injury, most affected area in human body and deadly injuries. The injury patterns formed from accidents have great medico legal importance. Statistical study of accident cases is made for clear study about road traffic accident cases in Kozhikode district occurred in 2019.

3.2 Objectives:

- To study about different injuries associated with road traffic accidents.
- To analyse statistically
- To study about deadly injuries
- To study about measures for reducing road traffic accidents

CHAPTER 4

METHODOLOGY

Details of all vehicular accidents occurred during 2019 in Kozhikode district was taken for the study. For the purpose of the study, a Road traffic accidents was defined as an accident which took place on the road between two or more objects, one of which must be any kind of moving vehicle. Any injury on the road without involvement of a vehicle, (eg. a person slipping and falling on the road and sustaining injury) or injury involving a stationary vehicle (eg. persons getting injured while washing or loading a vehicle) were excluded from the study. The victims of the accidents were interviewed to obtain the information about the circumstances leading to the accident. A pre-tested proforma specially designed for this purpose was used for interviewing the accident victims. The medico-legal records and case-sheets of the victims were referred for collecting additional information and where necessary for cross checking.

Details was collected from Kozhikode DCRB, Kozhikode Government Medical College and Kozhikode City Police station. Collected data was entered in Microsoft Excel 2016 and it was sorted and filtered on the basics of age, type of vehicle, gender, fatal and non fatal etc. Statistical study was performed on basis of collected data.

CHAPTER -5

RESULT & CONCLUSION

5.1 Result

A total of 1599 road traffic accidents involving 1772 victims was reported in Kozhikode district during 2019 year.

Table 5.1: Age and sex distribution of victims.

AGE(yrs)	No. of MALE	No. of FEMALE	TOTAL
0 – 9	16 (0.9%)	11 (0.62%)	27 (1.52%)
10-19	102(5.76%)	39(2.2%)	141(7.96%)
20-29	327(18.45%)	102(5.76%)	429(24.21%)
30-39	196(11.06%)	92(5.2%)	288(16.25%)
40-49	197(11.1%)	87(4.9%)	284(16.03%)
50-59	203(11.45%)	73(4.1%)	276(15.58%)
60-69	173(9.76%)	54(3.05%)	227(12.81%)
>70	79(4.46%)	21(1.18%)	100(5.64%)
TOTAL	1293(72.97%)	479(27.03%)	1772(100%)

There were male 1293 (72.97%) and female 479 (27.03%) casualties. The average age of the victims was 31.5 years. The highest number (24.21%) of victims were between 20-29 years of age. About 49.94% of the victims were under 40 years age group, There were 65 children (1.9%) below 12 years of age with an average age of 7.1 years.

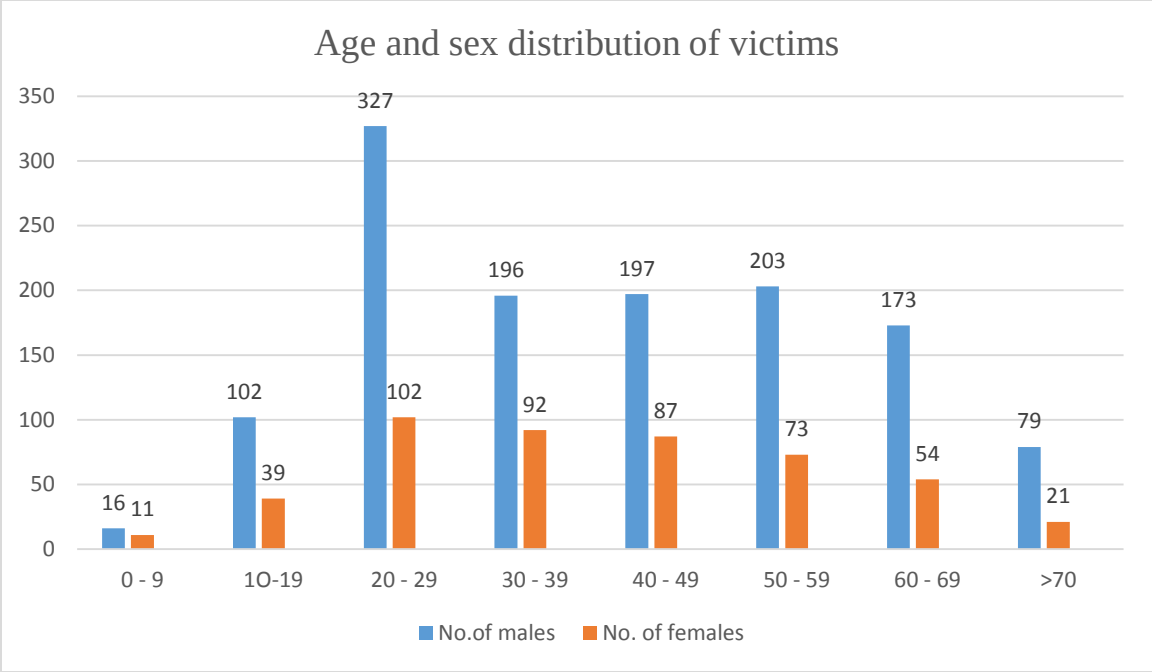
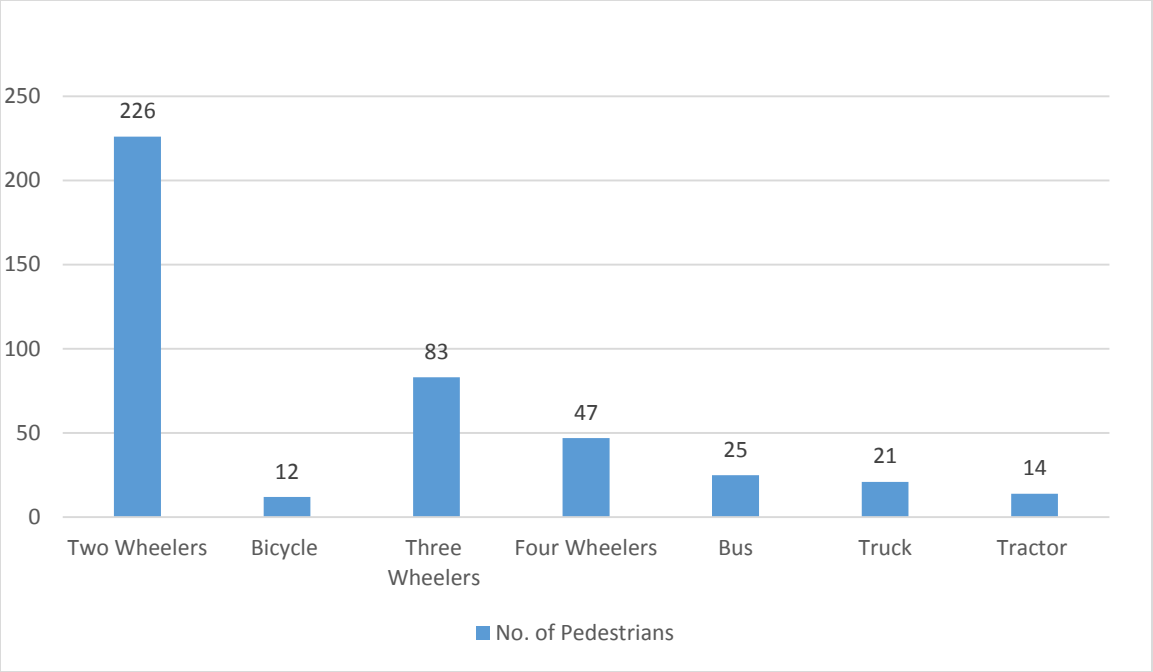


Table 5.2: Type of vehicles involved in injuries to pedestrians.

Types of Vehicle	Pedestrians No. (%)
Motorized Two wheelers	226(52.8%)
Bicycle	12(2.8%)
Three wheelers	83(19.4%)
Four wheelers	47(10.99%)
Bus	25(5.84%)
Truck	21(4.9%)
Tractor	14(3.27%)
Total	428(100%)

Motorized two wheelers includes Motor cycle, Scooter and Moped.
Four wheelers includes Car, Jeep and Van.



Pedestrians and drivers were 22% and 48.1% of road traffic accident victims respectively. The occupants of vehicles constituted the largest (43%) group of victims. Thirty-five pedestrians (4.9%) injured were involved in an road traffic accident with a truck. Buses caused injuries to 25 pedestrians (5.84%). Motorized two wheelers and four wheelers were involved in road traffic accidents in which 226 (52.8%) and 47(10.99%) pedestrians were injured respectively. A total of 853 drivers were involved in road traffic accidents. Among the drivers of different types of vehicles, there were 1.69% bicyclists. Motorized two wheeler drivers were victims in 31.1% cases while bus and four wheeler drivers were victims in 23.1% and 17.5% cases respectively. Among motorized two wheelers 97(42.9%) were scooter drivers. Of the 853 drivers involved in road traffic accidents, 12 could be interviewed. Among them 2 were cyclist and bullock cart drivers who did not require a license. From the remaining 10 drivers 'of different motor vehicles, 7 mentioned that they had driving license, one had learner's driving license and 3 had no valid license. All those who had no license were driving motorized two wheelers. None of the drivers or occupants of vehicles was using protective gear at the time of the accident. Out of 853 drivers, 432 (50.64%) were found to have consumed alcohol.

Table 5.3: External injuries among the victims.

Sites	Abrasions	Laceration Multiple	Superficial Injuries	Crush injury
Head	102	267	6	2
Neck	13	7	2	2
Chest	76	13	4	2
Abdomen	34	7	4	3
Pelvis	32	19	2	0
Upper limb	423	126	25	11
Lower Limb	488	278	43	48
Face	304	326	34	6
Back	56	3	2	0
Total	1528	1046	122	74

The limbs and the face were the most commonly affected areas to suffer external injuries. The limbs (63.1%) and face (17.5%) were common sites for abrasion, while lacerations were common on the face (29.7%), head (28.2%) and the limbs (38.9%). Multiple superficial injuries were noted more commonly in the lower limbs (36.8%) and face (33.3%), while crush injuries were predominantly seen in the lower limbs (70.6%). Head injuries were the commonest form of internal injuries seen in victims (34.1%) followed by injuries to the lower limbs (13.7%) and face (10.7%). Injuries to the chest (8.5%), pelvis (8.2%) and upper limb (8.1%) were seen in roughly equal proportion of victims. Others sites were back (7.65%), spine (4.3%) and neck (0.9%).

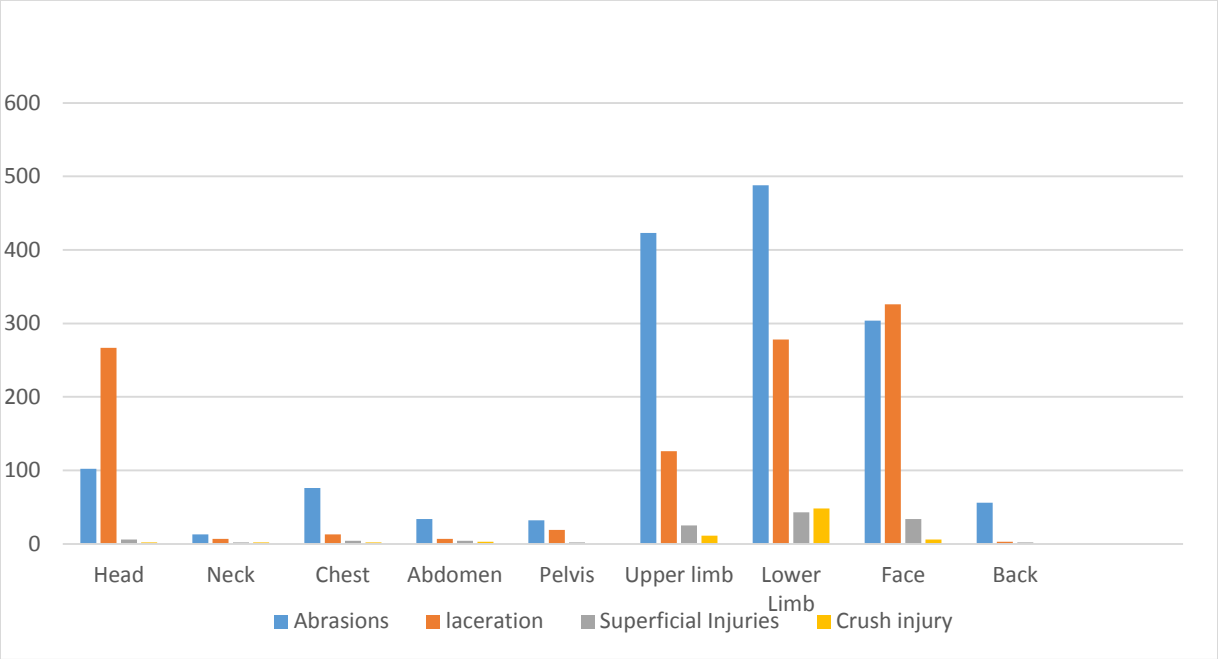
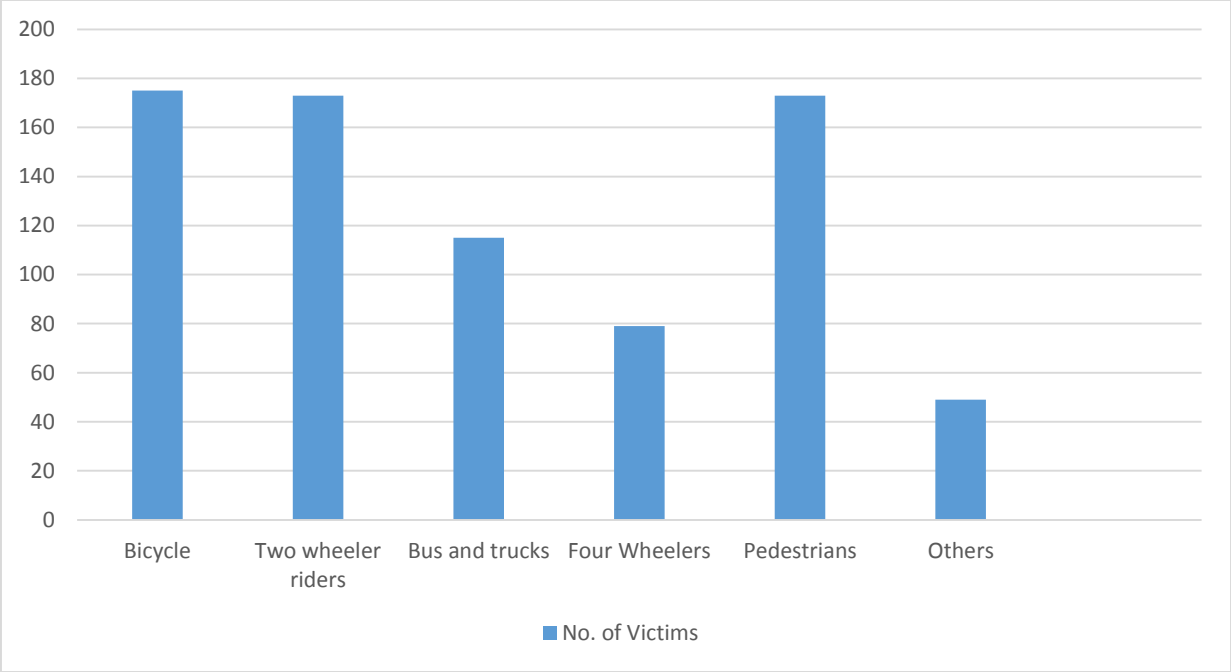


Table 5.4: Distribution of head injuries among the Road Traffic accident victims

Type of Vehicle	No.(%)
Bicycle	175(22.9%)
Two wheeler riders	173(22.6%)
Bus and trucks	115(15%)
Four Wheelers	79(10.3%)
Pedestrians	173(22.6%)
Others	49(6.6%)
Total	764(100%)

Head injuries were common among bicycle riders, pedestrians and riders of motorized two wheelers. Bicycle riders had the highest proportion (22.9%) of head injuries, followed by 22.6% among pedestrians and riders of motorized two wheelers. Compared to pedestrians, bicycle riders and riders of motorized two wheelers had a significantly higher proportion of head injuries.

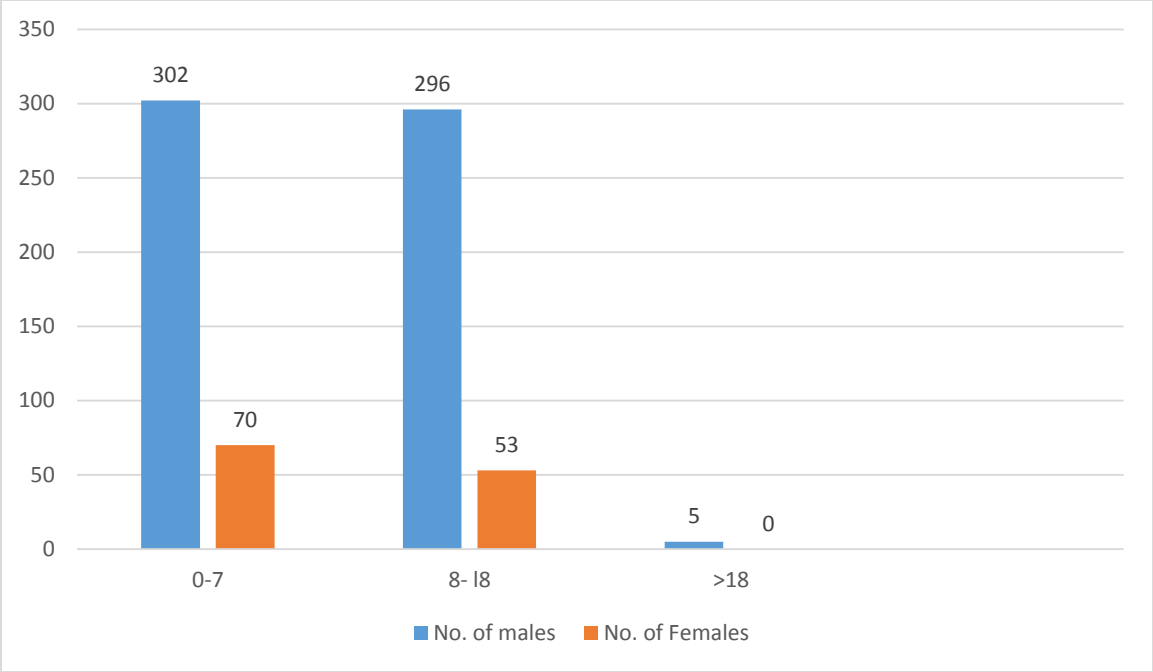


A total of 221 fractures were noted among the victims. The commonest site of fracture was he lower limb (43.4%), followed by upper limb (19.0%) and facial bones (10.9%). Other sites were ribs (7.7%), clavicle (6.8%), skull (5.4%), pelvis (3.6%), scapula (2.3%) and spine (0.9%).

Table 5.5: Severity of injuries according to "Trauma Index".

Score	**Male No.**	**Female No.**	**Total No.**
0-7	302(50.1%)	70(56.9%)	372(51.2%)
8-18	296(49.1%)	53(43.1%)	349(48.1%)
>18	5(0.8%)	0	5(0,7%)
Total	603	123	726

The severity of injuries suffered by the victims was graded according to the "Trauma Index". According to this index injuries are classified as minor injuries (O-7), moderate injuries (8-18) and severe injuries (more than 18). A total of 372(51.2%) victims had mild injuries. Moderate injuries were seen in 349(48.1%) victims and severe injuries in 5 victims.



5.2 Conclusion

In the present study the highest number of Road traffic accident victims (31%) were found between the age group of 20-29 years. The accident rates were 4.9 times higher in males than in females according to this study. In this study, pedestrians constituted 22% of the road users involved in Road traffic accident, followed by bicyclists (15.3%) and two wheeler drivers (10.9%).

The role of alcohol contribute significantly . Also the impairment increases as the blood alcohol level rises. In addition, the risk of accidents are higher in youngsters and elderly people for similar blood alcohol levels. Abrasions and lacerations were the commonest types of injuries among the external injuries noted in this study. Head injury was the highest among the internal injuries noted in this study, a feature. Other common sites were the lower limbs and face. Bicyclists and pedestrians suffered the highest number of head injuries, followed by motorized two wheeler riders. The pedestrians and bicyclists in most of the instances were knocked down by another vehicles leading to head injury. Helmet was not used by any motorized two wheeler user. This could be the possible reason for head injury among them.

Among fractures, present study found that lower limbs were the commonest site for fracture, followed by fracture of upper limbs and facial bones. But in another study it was reported that the highest number of fractures were in upper limbs followed by lower limbs and facial bones

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