ROAD TRAFFIC ACCIDENTS;
FATALITIES IN FAISALABAD

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ABSTRACT... Objectives: To study the road traffic accident (RTA) fatalities in Faisalabad, in relation to vulnerability of victims, their socio demographic characteristics and to identify the risk factors of fatal RTAs. **Study Design:** A descriptive retrospective study. **Setting:** Post Mortem Unit, Allied Hospital, Punjab Medical College (PMC) Faisalabad. **Period:** From January to December, 2006. **Materials & Methods:** Eighty-five dead bodies of fatal RTAs brought for Medico legal autopsies, to Allied Hospital, (PMC) Faisalabad, during calendar year 2006 were included in study for Post Mortem Examination. **Results:** In this study maximum cases of road traffic accident were among males (91%), male to female ratio was approximately 9:1. Maximum incidence of RTA was in the age range of 21 to 50 years comprising 55.29% and commonest age group involved was 21-30 years accounted for (21.18%). Most common victims were pedestrians 41.18% followed by motorcyclists 29.41% and cyclists 16.47%. Incidence was more common in the pedestrian. **Conclusions:** Road traffic accident is the leading cause of deaths and disabilities worldwide and it is needed to prevent them. Road traffic crashes are predictable and therefore preventable. In order to combat the problem, there is a need for close coordination and collaboration, using a holistic and integrated approach, across many sectors and many disciplines.

Key words: Road Traffic Accidents, Medico legal autopsy. RTA Injuries, Motor Vehicle, Crashes, RTA Fatalities.

INTRODUCTION

Road Traffic accidents (RTAs) are the major public health problem all over the world where society and decision makers still accept death and disability at large scale among young people. This human sacrifice is deemed necessary to maintain high levels of mobility and is seen as a necessary "externality" of doing the business[1]. Discussion only revolves around the number of deaths and injuries we are willing to accept. Everyday as many as 140,000 people are injured on the world's roads, more than 3,000 die and some 15,000 are disabled for life. Each of those people has a network of family, friends, neighbors, colleagues or classmates who are also affected emotionally and otherwise. Families struggle with poverty when they lose a breadwinner or have the added expense of caring for the disabled family member[2].

It is estimated that 10 millions motor vehicle crashes (MVC) occur annually in the world[3]. The injuries caused by (RTAs) account for 2.1% of global mortality. The developing countries bear a large share of burden and account for about 85% of the deaths as a result of road traffic crashes[4]. Deaths from (RTAs) have been characterized as a hidden epidemic affecting various sectors of society all over the world[5,6].

Road traffic accidents are important public health issue and cost a lot to individuals, families, communities and nations. The estimated cost is around 1-2% of a country's GNP in lower income countries[5]. About 1.26 million people in year 2000, died of fatal road crashes around the world, 90% of them in low and middle income countries. Sixty five percent of deaths involve pedestrians and 35% of pedestrian deaths are children[6]. Over 10 million persons are crippled or injured each year in RTAs. It has been estimated that at least 6 million more will die and 60 million will be injured during the next 10 years in developing countries unless urgent action is taken[7].

The Global Burden of Disease, a study undertaken by the World Health Organization (WHO), Harvard University and the World Bank showed that in 1990, traffic crashes were assessed to be the world's 9th most important health problem. The study forecasts that by the year 2020 (RTAs) would move up to 3rd place in the table of leading causes of death and disability facing the world community[7].

From a public health perspective, traffic fatalities have become increasingly more significant among overall fatalities and are affecting mainly the most vulnerable

users. Actual figures are certainly higher than those reported, due to underreporting, the failure in reporting the deaths related to traffic causes and the failure in registering post-accident deaths[8]. In 2000, the Road Traffic Injuries (RTI) mortality rate for the world was 20.8 per 100,000 populations (30.8 in males & 11.0 in females).The Asia-pacific region accounts for about 60% of global road deaths despite having only 16% of the world's vehicles. In the United States, it was 26.7 for males and 8.4 for females[9]. In Americas during 1997-2000 mortality from all transport accidents was the tenth leading cause of death in the general population[10].

In the low income countries like India & Pakistan, as many places can only be accessed by roads & we have to face the chaotic road traffic system by spending considerable time on the roads, consequently be more prone to (RTAs).In India over 80,000 person die in road traffic crashes annually, over 1.2 million are injured seriously and about 30,000 disabled permanently[11]. In the developing countries, little research is conducted on the causes and consequences of RTIs as compared to their impact on health and population. There seems to be scarce awareness regarding the contributions of RTIs towards the burden of disease (BOD) and this remains a neglected area in research and policies[12].

Road traffic accidents are usually caused by human errors including ignorance, overtaking, rash & negligence driving, use of mobile phones while driving, least knowledge about traffic rules as well as defective roads, poor maintenance of the vehicles, improper light, diminished visibility due to certain atmospheric conditions & violation of the traffic rules also play the significance role, thus highlighting the strict implementation of the road safety measures[13].

Pakistan is passing through an epidemiological transition; and facing the double burden of diseases. During the last four decades, a marked increase in the injuries caused by (RTAs) and related risk factors, has been noted with great concern, possibly reflecting the changes in personal lifestyles, urbanization, rural development, increase in the motor vehicles and the introduction of mechanized farming in the agriculture sector[12]. Policy makers as well as the health professionals have been slow in recognizing the public health importance of injuries. This issue has been recognized as a public health problem in the 9th, five-year plan[14].

Thousands of people die on the roads of Pakistan every year and the poor are disproportionately affected, with most of the victims being pedestrian, motorcyclists, bicyclist, and passenger of public transport. Young road users are particularly more vulnerable. Road accidents are always a human tragedy but more serious when the younger children are involved. The economic cost of road crashes and injuries is estimated to be over 100 billion rupees for Pakistan. However, the loss is more than just numbers, as road traffic injuries push many families more deeply into poverty by the loss of their breadwinners and inflict a tremendous continuous burden on the disabled victims and their families; and on health care system[15].

The road traffic accidents are largely preventable by taking appropriate measures well in time. The objective of this study was to assess the prevalence of fatal road traffic accidents (RTAs) reporting to the hospital for Medico legal autopsy. The epidemiological factors in relation to the hosts (road users), the agents (vehicles) and the environmental condition (place of occurrence, seasons, months), were also taken in consideration for detailed study.

MATERIALS AND METHODS

Study was conducted at Allied Hospital, Punjab Medical College (PMC) Faisalabad, and the reference year for the study was 2006. The autopsy record of 85 victims of fatal RTAs, brought from various Police stations of Faisalabad and autopsied in the mortuary of Allied Hospital, Faisalabad, during Jan-Dec 2006, were examined in detail.

The epidemiological features related to the victim's age group, gender distribution, and area of RTA occurrence (rural / urban), type of road users, type of vehicle involved in RTAs and injuries caused to the victims were noted. The facts about circumstances of the accidents & other data related to the cases were collected from police

papers namely Inquest report and FIR.
The dead bodies were examined for external injuries including bones and joints. The nature of injuries and possible cause of death were given due consideration. Moreover, place of death of the victim and nature of treatment provided to them, after the occurrence of RTA, was evident from police inquest and hospital record. A Proforma for the purpose of recording history, epidemiological data and the nature of external injuries etc was prepared for the purpose of filling observations of the study. Cases with incomplete records were excluded from the present study. Findings collected in the proforma were tabulated and analyzed into percentages to standardize the result. Approval from the Ethical Review Committee of Punjab Medical College was obtained to conduct this study.

RESULTS

During one year study period, a total of 312 Medico legal autopsies were conducted at the mortuary of Allied Hospital (PMC) Faisalabad, out of them only 85 cases died of the fatal road traffic accidents were studied in detail. The (RTA) fatalities were 27.24% of the total Medico legal autopsies conducted.

The age and gender distribution is shown in (Table-I & Fig.1). Males 77 (91%) outnumbered the females 8 (9%) among victims of fatal RTAs. The major number of road traffic accident fatalities 47 (55.29%) was noted in the range of 21–50 years, out of which age group 21–30 years accounted for a maximum (21.18%) of the total victims of fatal RTAs. The age group 31–40 years accounted for (17.65%), Children below the age of 10 years was (9.42%) whereas only (10.59%) deaths were recorded in the victims above 60 years of age.

Table-II. Shows various types of road users involved in fatal RTAs. Majority of the victims were pedestrian; 35 (41.18%) cases followed by the motorcyclists (29.41%) and (16.47%) bicyclists / pedal cyclists were died of the RTAs. Vehicular occupants were (9.41%), donkey cart riders (2.35%), whereas auto rickshaw driver accounted for only (1.18%) among the total victims of fatal road traffic accidents.

The number of RTA victims and their variations affected by the seasonal changes are shown in Table-III. During summer season (May to Aug) majority 40 (47.05%) victims, followed by spring & autumn seasons (March/April) and (Sept/Oct) 25 (29.41%) cases, whereas during the winter and foggy season in months of (Jan / Feb) and (Nov / Dec) only 20 (23.53%) cases of fatal RTAs were recorded.

Table-I. Distribution of RTA fatalities according to the age & sex

Age group (years)	Sex		Victims of fatal RTAs	
	Male	Fema	Total	%
Up to 10	6	2	8	9.41%
11-20	11	1	12	14.12%
21-30	17	1	18	21 18%
31-40	12	3	15	17.65%
41-50	13	1	14	16.47%
51-60	9	-	9	10.59%
61-70	8	-	8	9.41%
71-80	1	-	1	1.18%
Total	77	8	85	100%

Fig-1.Showing the distribution of age and gender in victims of fatal RTAs

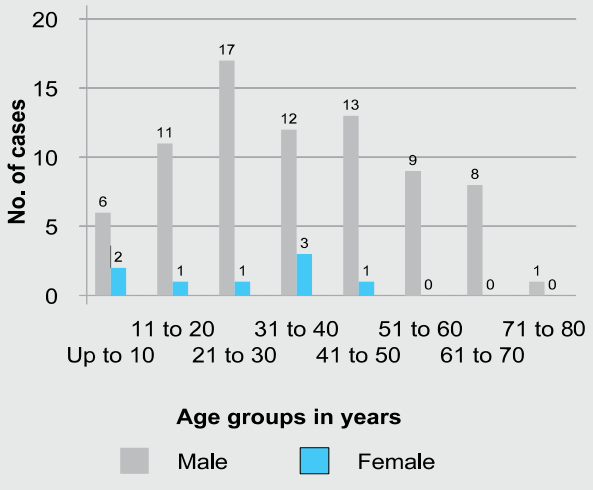

Table-II. Showing modes of fatal RTAs regarding road users.

Type of road users	Cases	%
Pedestrian	35	41.18%
Motorcyclist	25	29.41%
Bicyclist	14	16.47%
Car / vehicular occupants	8	9.41%
Donkey cart riders	2	2.35%
Rickshaw driver	1	1.18%

Fig-2. Showing percentage of gender in victims of fatal road traffic accidents

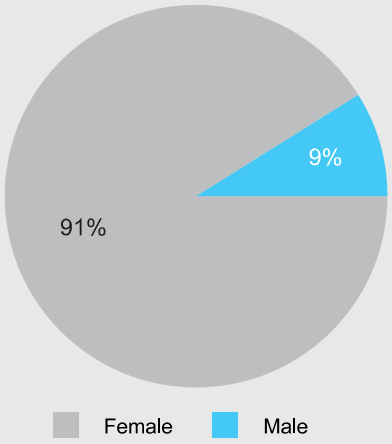

Fig-3. Showing percentage of victims in relation to area of occurrence of fatal RTAs

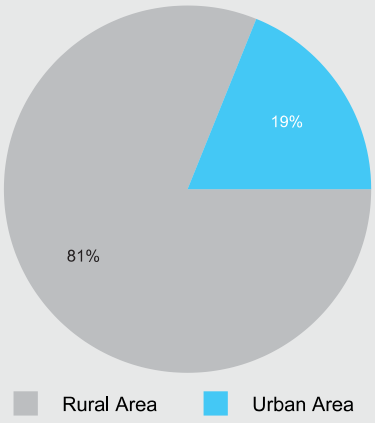

Table-III. Showing number of victims in relation to the seasonal variations

Seasonal variation (months)	No. of the victims of fatal RTAs	%
January	4	4.70%
February	5	5.88%
March	6	7.05%
April	5	5.88%
May	8	9.41%
June	8	9.41%
July	14	16.47%
August	10	11.76%
September	8	9.41%
October	6	7.05%
November	5	5.88%
December	6	7.05%
Total	85	100%

DISCUSSION

Road traffic crashes rank first among all accidents through out the world and considered as single greatest cause of mortality in young people. Moreover, RTAs are a major cause of socioeconomic burden on the victims, their families, hospitals, rehabilitation centers and the country. Fatalities due to (RTA) tend to deplete the pool of human resources as majority of the victims are working males[16]. It is difficult to estimate the economic cost of RTAs as it entails medical care, rehabilitation services, and the loss of productivity as a result of absenteeism or disability[17].

In year 2006, total 312 cases were brought for Medico legal autopsy to the mortuary of Allied Hospital (PMC) Faisalabad, out of them 85 died of RTAs constituted (27.24%) of the total cases. This finding is consistent with Singh & Dhattarwal[18], they observed (29.8%) whereas; a study of fatal RTAs conducted by Kumar A. et al,[19] reported the incidence of (35.27%) RTA fatalities among total Medico legal autopsies.

Not surprisingly this study shows the overwhelming majority of (91%) males with males:female ratio of 9:1. It is due to greater male exposure because of their active life to earn for the family & dependents. The females, due to cultural backgrounds keep themselves indoor and tendency that females are accompanied by a male family member while moving on the roads and extra care is observed. Hence less mortality of females in RTAs. Similarly a higher incidence of road traffic accidents among males has been reported by many other researchers[5,18,20,21].

In this study the highest incidence of RTA fatalities (55.29%) was observed in the range of age 21 – 50 years. The most common age group involved was 21-30 years (21.18%) and lowest incidence in the children below 10 years was (9.41%). These findings are consistent with the Singh & Dhattarwal[18] and in close accordance with those of other[20, 21, 22,23]. The age range between 21–50 years is the active phase of life & the age group 21–30 years is physically and socially more active having habits of taking the risks, hence account for the maximum number of road traffic accident fatalities. The lesser involvement of the children below 10 years may be due to the reason that they are mostly accompanied by an elder family member while on road.

It was observed that pedestrians accounted for maximum number of fatalities (41.18%) followed by the motor cyclists (29.41%) & lowest incidence was noted among donkey cart rider (2.35%) and auto rickshaw driver only (1.18%). Pedestrians being the most common among vulnerable road users can be explained by the fact that there is a lack of proper footpath or roads, presence of vendors and other commercial instillation by the side of roads. Majority of the road users are pedestrians and comparatively more exposed to the risk of RTAs. Moreover, pedestrians mostly belong to the lower middle socioeconomic class, illiterate and unaware from the traffic concepts. Our findings are consistent with those of various workers[13,18,22,23] in the field have noted that pedestrians are the most common victims in road traffic accidents. Kaul A. et al,[13] have also observed that pedestrians are mostly involved.

Motor cyclists comprise of second most commonly involved group in fatal RTA being careless speed driving, thrill seeking, overtaking and less stability of the vehicle. Faisalabad is the third largest city of Pakistan, being industrial, thickly populated, overcrowded by the motorcyclists, cyclists, animal carts loaders and pedestrians on the same roads used by the heavy transport vehicles; so higher chances of road traffic accidents and involvement of motorcyclists, cyclists & animal cart riders.

Our study shows that maximum number of fatal road traffic accidents (47.05%) took place in summer season (May to August) and the highest incidence 14.47% was noted in the month of July. This is consistent with the finding of study conducted by Jha et al[21]. During (March/April) & (Sept/Oct) 29.41% whereas in winter season (Nov/Dec) & (Jan/Feb) 23.53% of the total cases were noted. The higher incidence of RTAs during months of May to August is attributed to the reason that in these days it is very hot outside and every one is in hurry. The roads become overcrowded due to all type of vehicle and especially the non motorized vehicles / animal carts create lot of problem like stampede leading to RTAs as every body tries to get out of the scene as quickly as possible by violating the traffic rules.

CONCLUSIONS

Road traffic accident is the leading cause of deaths and disabilities worldwide and it is needed to prevent them. In Pakistan, according to the law, all motor vehicle crashes must be reported to police authorities if there has been an injury, death, or loss of property. But due to under-reporting the magnitude of Road traffic injuries and deaths are much more substantial than is evident from official statistics. Police personnel collect data for legal purposes and not for research and public policy. The nature, type of data, and methods of collection is a challenges for researchers of RTAs and deaths.

Road traffic crashes are predictable and therefore preventable. In order to combat the problem, there is a need for close coordination and collaboration, using a holistic and integrated approach, across many sectors

and many disciplines.

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