



RESEARCH ARTICLE

EPIDEMIOLOGICAL STUDY OF ROAD TRAFFIC ACCIDENTS ATTENDING ORTHOPEDIC OPD OF CH. RAHMAT MEMORIAL TRUST HOSPITAL, FROM JAN.2015 TO DEC.2015

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ABSTRACT

Objectives: To study epidemiology of Road Traffic Accidents attending orthopedic OPD of Ch Rehmat Memorial Trust Hospital From January 2015 to December 2015.

Study design: Cross sectional descriptive study was conducted among the cases attending Orthopedic OPD of ch rehmat trust hospital from January 2015 to December 2015

Patients and Method: The information was collected from OPD register by using a preformed pretested and prestructured questionnaire. The questionnaire consisted of different variables e.g, age sex type injury etc.

Results: 100 patients were recruited for study from Emergency and Orthopedics OPD of Chaudary Rahmat Ali Hospital, in which 67% are male and 33% females. Minimum age was 3 years and maximum was 80 years. Out of 100 cases of RTA, 73% conceded major injury and 27% conceded minor injury. Out of surveyed mostly injuries were abrasions, lacerations. Fracture and dislocations. In our survey 20% of RTA were caused by cars, 4% by buses, 37% by motor cycle, 6% by cycle, 12% by pedestrians and 20% by others. Region of body involved in RTA was following, 39% head and neck injuries, 11% trunk, 28% upper limb and 22% lower limb. In our survey, victims of RTA was as following, 22% were drivers, 5% were front seat passengers, 15% were back seat passengers, 11% were motorcyclist, 24% were pedestrians and 23% were others. According to survey, 20% of RTA cause by inattentiveness of drivers, 40% by over speeding, 3% caused by use of cell phone while driving, 30% caused due to road was not in order and in 34% cases cause was not known. Treatment status of RTA cases in Chaudary Rahmat Ali memorial trust was 31% treated and discharged at same day, 24% were admitted, 1% died and 44% were referred to other hospitals. According to survey, 47% RTA occur in January to March, 14% occur in April to June, 24% In July to September and 15% in October to December.

Conclusion: From this research we concluded that road traffic accidents are very common in this area of Lahore and are a leading cause of death all over the World. RTAs are quite prevalent in Males and less in females. It has also been concluded that problem is precipitated due to negligence and violence of rules, Most of the road traffic accidents cases were due to over speeding. Throughout the survey we noted that most of the RTAs registered in Chaudary Rahmat Ali Hospital were of Motorcycles and most of the RTA occur from December to February. Due fog and bad weather. From this hospital most of the cases were referred to other hospitals due to severity and lack of facilities in Chaudary Rahmat Ali Hospital.

INTRODUCTION

Every 30 seconds, someone in the world is killed in a road accident. Road accidents happen on a daily basis and the range and severity of injuries caused by road accidents is enormous. Some injuries can have a short term impact on day to day life and then heal permanently. Many die as a consequence of inexperience, speeding intoxication through drink or drugs or just plain recklessness. (Nantulya and Reich, 2012) An estimated 1.2 million people lose their lives in road traffic crashes every year, and another 20 to 50 million are injured all over the world. Road traffic injuries are currently estimated to be the NINTH leading cause of death across all age groups globally, and are predicted to become the seventh leading cause of death by 2030. Road collisions are the second leading cause of death for people between the ages of 5 and 29 and third leading cause for people between 30 and 44. (Drinking and Driving, 2009) According to WHO Statistics data on traffic

accidents in Pakistan from 2004 to 2013, the ratio of killings in road accidents in Sindh was recorded the highest at up to 86 percent. The overall ratio of deaths in road accidents across the country has been recorded up to 55 percent which according to the experts and former traffic police officials is the highest. According to the data, total 51,416 people died in 97,739 road accidents across the country. Out of total casualties, as many as 29,524 were killed in 51,715 accidents in Punjab, 9,639 died in 13,965 accidents in Sindh, 9,494 people died in 27,939 accidents in Khyber Pakhtunkhwa and 2,250 people died in Baluchistan in 4,085 accidents. Out of the total number of accidents, 43,582 were recorded as fatal which is 47.3 percent. While analyzing the data further in order to know the ratio of people killed per accidents across the country, it was found that the ratio of deaths per accident is 55 percent in last 10 years across the country. (Saradadevi and Bajaj, 2014) The last 10 years' data on traffic accidents present a horrific picture as average 1500 people died every day in traffic accidents across the country. Every day around the world, almost sixteen thousand people die from injuries. For every person that dies, several thousands more are injured, many of them with

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permanent sequelae of injuries. Injuries occur in all regions and countries, and affect people of all ages and income groups. The magnitude of the problem however varies considerably by age, sex, region and income group. This problem of road traffic crashes and resulting injuries and fatalities is however more acute in a developing country like Pakistan. (World Health Day, 2004) As a developing country, Pakistan has no exception. Not a day passes without road traffic accidents happening in the roads in Pakistan in which countless number of people are killed or disabled. Often members of the whole family are wiped out. Those who are affected or killed are mostly people in their prime productive age. The highest burden of injuries and fatalities is borne disproportionately by poor people, as they are mostly pedestrians, cyclists, and passengers of buses and minibuses. (World Health Day, 2004) The approach to implement the rules and regulations available to prevent road accidents is often ineffective and half-hearted. Awareness creation, strict implementation of traffic rules, and scientific engineering measures are the need of the hour to prevent this public health catastrophe. (Report on emergency medical care to victims of accidents and during emergency medical condition and women under labour, 2006) Now awareness among the health professionals about the various modalities available to prevent road accidents and also to inculcate a sense of responsibility toward spreading the message of road safety as a good citizen of our country. (Aeron Thomas *et al.*, 2011) There are many causes of road accidents, some of them are, Distracted Driving, Speeding, Drunk Driving, Reckless Driving, Rain, Running Red Lights, Running Stop Signs, Teenage Drivers, Night Driving, Design Defects, Unsafe Lane Changes, Wrong-Way Driving, Improper Turns, Driving Under the Influence of Drugs, Drowsy Driving, Fog and Animal Crossings etc. (Beyer and Ker, 2009) Roads provide very important means of transport and communication throughout the world and have a great role to play in the development of nations and people through improving access to information and resources, leading to better health outcomes among populations. However, recent years have witnessed an increasing burden of traffic on the roads.

The increasing number of vehicles has consequently led to increased opportunities for road traffic accidents to occur, thus placing a considerable health burden on populations because of the associated injuries, deaths and disabilities, world-wide. (Afukaar, 2013) The World Health Organization (2009) estimates that road traffic accidents will be the fifth leading cause of deaths worldwide by 2030, leading to an estimated 2.4 million fatalities per year, if proper steps are not taken to prevent deaths and injuries on the road. Low income and middle income countries have higher road traffic fatality rates (21.5 and 19.5 per 100,000 population, respectively) than high-income countries (10.3 per 100,000 population). Over 90% of the world's fatalities on the roads occur in low-income and middle income countries, which have 48% of the world's registered vehicles. (Elizabeth Kopits and Maureen Cropper, 2014) Evidence indicates that although India has one percent of the world's vehicles, it accounts for as high as six percent of world's RTAs. The RTAs rate is of 35 per 1000 vehicles in India is one of the highest in the world and so is the associated RTA fatality rate of 25.3 per 10,000 vehicles. (Sihvola *et al.*, 2012)

The proportion of pedestrians among those with non-fatal RTI appears to be relatively smaller. A study of RTA victims presenting to the emergency department of a hospital in Karad, Maharashtra found 13% (n=350) of the injured to be pedestrians (Peter Cummings *et al.*, 2012), whereas in a population based study in Hyderabad, Dandona *et al.* found that pedestrians accounted for one third (33%, n=1032) of the non-fatal RTI. A study conducted in Bangalore that involved roadside survey of road users (random as well as on suspicion) found that 5% of pedestrians were under the influence of alcohol. This means that providing fast and reliable emergency services also in lesser populated area (Vinand M. Nantulya and Michael R. Reich, 2012) Roads provide very important means of transport and communication throughout the world and have a great role to play in the development of nations and people through improving access to information and resources, leading to better health outcomes among populations. However, recent years have witnessed an increasing burden of traffic on the roads. The increasing number of vehicles has consequently led to increased opportunities for road traffic accidents to occur, thus placing a considerable health burden on populations because of the associated injuries, deaths and disabilities, world-wide. (Margie Peden *et al.*, 2002)

The focal point of this study was to provincially analyze traffic accidents in Pakistan. There are many types and causes of accidents. However, mostly accidents take place due to negligence which might and must have been avoided. A vast literature had reviewed to make this study more persuasive. This research comprised of working on secondary data. Different variables included total accidents, fatal and nonfatal accidents, Persons killed and injured and total number of vehicles involved in accidents from year 2000 to 2010 has tested statistically. Coefficient of variances had applied to ensure consistent Province of Pakistan concerning traffic accidents. ANOVA and Post-Hoc LSD test used to check mean difference between provinces and lastly OLS regression model had determined to ensure positive or negative relationship between total accidents and total number of vehicles involved in accidents. Results show that Punjab is dominant among all provinces in term of traffic accidents. Additionally, C.V. shows Punjab as most consistent province regarding traffic accidents. ANOVA and LSD test shows significant mean difference between all provinces. At last, regression model shows positive relationship between total accidents and total vehicles involved in accidents. The goodness of fit of that model was 98%. (Elizabeth Kopits and Maureen Cropper, 2013)

MATERIALS AND METHODS

This was a Descriptive Cross-sectional study conducted during 2016 among the injured patients by Road traffic Accidents who were brought to emergency and Orthopedic department of Ch Rehmat Memorial Trust Hospital Lahore, from Jan. 2015 to Dec. 2015. Sample size was calculated as 72, total patients who attended the hospital during year 2015 were 130 but we took 100 patients with complete epidemiological information. Data was collected directly as well as from Emergency register by trained medical students. Self Structured Questionnaire was used for data collection. Analysis was done through SPSS Version 10.

RESULTS

100 patients were recruited for study from Emergency and Orthopedics OPD of Chaudary Rahmat Ali Hospital, in which 67% were male and 33% females. Minimum age was 3 years and maximum 80 years with mean age 39 and S D \pm 12 yrs. Out of 100 cases of RTA, 73% conceded major injury and 27% conceded minor injury. Out of surveyed mostly injuries were abrasions, lacerations, Fractures and dislocations. In our survey 20% of RTA were caused by cars, 4% by buses, 37% by motor cycle, 6% by cycle, 12% by pedestrians and 20% by others. Region of body involved in RTA was following, 39% head and neck injuries, 11% trunk, 28% upper limb and 22% lower limb.

In our survey, victims of RTA was as following, 22% were drivers, 5% were front seat passengers, 15% were back seat passengers, 11% were motorcyclist, 24% were pedestrians and 23% were others. According to survey, 20% of RTA cause by unattentiveness of drivers, 40% by overspeeding, 3% caused by use of cell phone while driving, 30% caused due to road was not in order and in 34% cases cause was not known. Treatment status of RTA cases in Chaudary Rahmat Ali memorial trust was 31% treated and discharged at same day, 24% were admitted, 1% died and 44% were referred to other hospitals. According to survey, 47% RTA occur in January to March, 14% occur in April to June, 24% In July to September and 15% in October to December.

Table . Epidemiological Characteristics/variables of Road Traffic Accidents (n=100)

S. No.	Characteristics/variables	No.	(%) Deviation	Mean	Standard	
1.	Gender					
	Male	67	(67)			
	Female	33	(33)			
2	Age (years)	1-20	41	(41)	39yrs	\pm 12yrs.
		21-40	45	(45)		
		41-60	11	(11)		
		>60	03	(08)		
3	REGION OF BODY INVOLVED					
	HEAD & NECK, THORAX (Injuries and fracture of Mandible, nose, clavicle, ribs)	14	(14)			
	UPPER LIMB (Injuries, fractures and dislocation of humerus, radius, arm)	11	(11)			
	ABDOMEN & PELVIS	01	(01)			
	LOWER LIMB (Injuries and fractures of fibula, kneejoint, femur and ankle)	09	(09)			
	MISCELLANEOUS (Abrasion, laceration, bruises, Pain, hypertension, hypotension)	65	(65)			
	NATURE OF INJURIES					
	Major					
	Minor	73	(73)			
	TYPE OF VEHICLES	27	(27)			
	Cars					
	Buses	20	(20)			
	Motor cycles	04	(04)			
	Pedestrian	37	(37)			
	Cycles	12	(12)			
	Un known	06	(06)			
	Types of victims (injured persons)	21	(21)			
	Drivers					
	Front seat passengers	22	(22)			
	Back seat passengers	05	(05)			
	Motor cyclists	15	(15)			
	Pedestrian	37	(37)			
	Un known	24	(24)			
	POSSIBLE CAUSES OF ACCIDENTS	23	(23)			
	Drivers were not attentive & use Of mobile phones					
	Over speeding	23	(23)			
	Roads were not in order	40	(40)			
	Un known	03	(03)			
		44	(44)			
	TREATMENT STRATEGY					
	Treatment at CH. Rahmat Trust Hospital					
	Died	55	(55)			
	Referred to other Hospitals	01	(01)			
	TIME & MONTHS OF	44	(44)			
	Maximum accidents was	JAN - MARCH				
	Minimum was	JUN. - SEPT.	66 &	(66)		
			14	(14)		

DISCUSSION

100 patients were recruited for study from Emergency and Orthopedics OPD of Chaudary Rahmat Ali Hospital, in which 67% are male and 33% females. This shows that men are more exposed to road traffic accident because of driving, women are less exposed because women are not related to driving. All age groups are equally affected by road accident. Out of 100 cases of Road traffic accident 73% conceded major injury and 27% conceded minor injury. Out of surveyed mostly injuries were abrasions, lacerations. Fracture and dislocations. In our survey 20% of Road traffic accident were cause by cars, 4% by buses, 37% by motor cycle, 6% by cycle, 12% by pedestrians and 20% by others. Motor bikes are more involve in road traffic accidents because of over speeding wheeling and carelessness of drivers. Road traffic accidents causes lethal injuries, every part of is equally exposed to injury. According to survey region of body involve in road traffic accident was following, 39% head and neck injuries, 11% trunk, 28% upper limb and 22% lower limb. In our survey, victims of Road traffic accident. These results were compare able to the study done by Peter Cummings *et al.*, "Association of Driver Air bags with Driver fatality: A matched Cohort Study." *British Medical Journal* 324, no. 7346 (2002): 1119-2; and Mohan, "Road Safety in less Less-Motorized Environments. Passenger injured was as following, 22% were drivers, 5% were front seat passengers, 15% were back seat passengers, 11% were motorcyclist, 24% were pedestrians and 23% were others. This shows that motor cyclists were more involved in road traffic accident. According to survey, 20% of Road traffic accidents were caused by unattentiveness of drivers, 40% by overspeeding, 3% by use of cell phone while driving, 30% due to broken roads and in 34% cases cause was not known. One of the leading cause of road traffic accident in developing countries like Pakistan is over speeding and over loading of buses, while in developed countries the major cause is alcohol drinking.

Conclusion

From this research we concluded that road traffic accidents are very common in urban area of Lahore and are a leading cause of death and disabilities in most populated cities like Lahore.. RTAs are quite prevalent in Males and less in females. It has also been concluded that problem is precipitated due to negligence and violence of rules, Most of the road traffic accidents cases were due to over speeding. Throughout the survey we noted that most of the RTAs registered in Chaudary Rahmat Ali Hospital were of Motocycles and most of the RTA occur from December to February. Due fog and bad weather. From this hospital most of the cases were referr to other hospitals due to severity and lack of facilities in Chaudary Rahmat Ali Hospital.

Recommendation

Safety education, Use of seat belts, safety helmets must be ensured., Children should be prohibited to take the front seat of

car, Alcohol and other sedatives drugs should be avoided before driving, Planning, organization and management of trauma, treatment and emergency services should be provided, Improvement of roads, speed imposition of speed limits and provision of fire guards., Enforcement of law Periodic re-examination of drivers after 55 years of age.

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