

Epidemiological Study of Road Traffic Accident Cases

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ABSTRACT

Aim: To determine the prevalence and epidemiological factors related to road traffic accidents victims.

Study design: Descriptive study.

Setting: Data were collected from medicolegal department of Sandeman provincial Hospital Quetta and study was conducted at Bacha Khan Medical College, Mardan.

Duration of the study: 01-January-2002 to 31-December 2002

Methods: A total of 1801 medicolegal patients of road traffic accidents have been taken. A proforma was designed to record the age, sex, and distribution of victims and the identity of cases brought in.

Results: out of 1801 cases males 1400 (77.7%) and 401 (22.3%) were females. The most frequent cases of road traffic accidents were found at the age of 21-30yrs, 590(32.8%), and the most common injuries were found on upper limbs, 700(38.9%).

Conclusion: Males were more commonly affected in R.T.A. as compared to females. Most common age group in RTA was 21-30yrs. Most common region involved was upper limb.

Keywords: Epidemiology, road traffic accident, medicolegal

INTRODUCTION

Transportation injuries are increasing at an alarming rate throughout the world¹. Every form of transport is associated with a risk and, as the speed of transport increases, particularly as mechanization is involved, the risks of an accident are increased and the effects of an accident are magnified².

The increased rate of fatal road traffic accident worldwide has been attributed to population explosion and increased motorization³. Increased motorization may be characterised briefly as the "automotive revolution", that is the motorizing of urban population especially in the developing countries³.

In developing countries, like Pakistan, roads often carry a wide range of users – from heavy goods-vehicles to bicycles and pedestrians without any separation. Road traffic accidents (RTA) are a significant, cause of any disability, death and economic loss in developing countries like Pakistan. Among the pedestrians, the most vulnerable are those young people who play an important part in the socio-economic growth of the country⁴. In most low income countries, the predisposing factors to road transport injuries are complex as they include complex interplay of political, economic, social-

cultural factors and lack of clear road safety policies⁵ official reports of Pakistan indicated that only 7000 RTA fatalities occur each year in Pakistan¹¹. A recent report estimated 41 000 RTA fatalities occur each year in Pakistan, 24% of all estimated fatalities in Eastern Mediterranean region¹². A better description of RTA injuries, particularly of non-fatal ones is essential for injury prevention and control measures⁶. Police data, which are often the only source of assessing the burden of RTA in lower middle income countries, highly underestimate non-fatal injuries^{10,7}. For instance, as compared with ambulance logs, police registered only 4% of non-fatal RTA injuries in Karachi, Pakistan⁸. Hospital data are an alternative to police statistics in assessing patterns of RTA injuries⁹. This study was planned for gap between the trends and results which were on medical record, so this study was planned to determine the prevalence and epidemiological factors related to the road traffic accidents victims which were presented for medicolegal department in Sandeman (Prov) Hospital Quetta.

MATERIALS & METHODS

This is a descriptive study and data were collected from 01 January 2002 to 31-December 2002. A total of 1801 medicolegal patients of road traffic accidents have been taken. The inclusion criteria were any case of medico-legal road traffic accidents and were brought to the emergency department of Sandeman (Prov) Hospital Quetta. Any other emergency or medicolegal cases were excluded from the study sample. A proforma was designed to record the date,

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age, sex, distribution of victims, the manner of injury and the identity of cases brought in. Age was categorized into seven groups: Group 1 includes age of the patient from (0-10yrs), Group 2 patients (10-20 years), Group 3 patients comprised of (21-30 years), Group 4 patients included (31-40 years), and Group 5 patients (40-50 years) Group 6(51-60yrs) and in Group 7 age taken from (above 60 yrs). Drivers and motorcyclists/bike were taken. Statistical analysis was done on SPSS version 20. The frequency and percentages were calculated for all categorical variables — age, sex, identity, distribution of victims and month wise frequency. Ethical approval was obtained from the Ethical Review Committee of the Bacha Khan Medical College, Mardan.

RESULTS

Table 1: Gender variation in RTA

Valid	Frequency	%	Valid%	Cumulative%
Males	1400	77.7	77.7	77.7
Females	401	22.3	22.3	100.0
Total	1801	100	100	

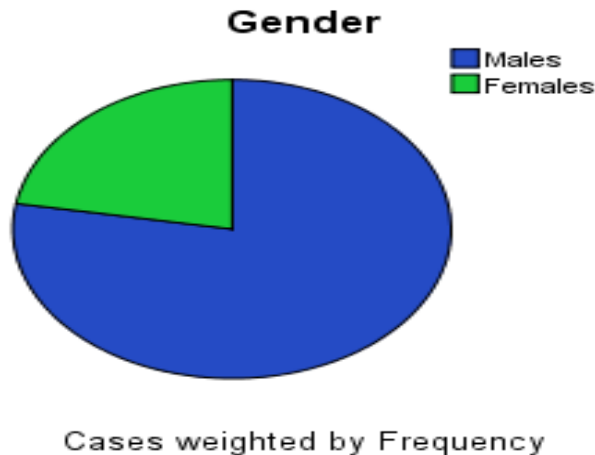


Table 2: Age variation in RTA victims

Valid Age(Yrs)	Frequency	%	Valid%	Cumulative %
0-10	80	4.4	4.4	4.4
11-20	280	15.5	15.5	20.0
21-30	590	32.8	32.8	52.7
31-40	500	27.8	27.8	80.5
41-50	220	12.2	12.2	92.7
51-60	70	3.9	3.9	96.6
>60 yrs	61	3.4	3.4	100.0
Total	1801	100	100	

A total of 1801 medico legal cases of road traffic accidents were recorded during the study period. Data were analyzed on using SPSS version 20. Road Traffic accidents results showed, in Table-1 out of

1801 cases males 1400(77.7%) and 401(22.3%) were females.

Table 2 showed age groups of road traffic accident victims ranged from 0 to more than 60 years. The most frequent cases of road traffic accidents were found at the age of 21-30yrs, 590(32.8%) and 2nd most common age group of 31-40yrs, 500(27.8%), and in 3rd most common age groups were 11-20yrs, 280(15.5%) which was followed by 41-50yrs containing 220(12.2%). A very least age group were found More than 60yrs, which contained 61(3.4%), and the 2nd least age group were 51-60yrs which contained 70(3.9%) which was followed by the age group from 0-10 yrs which contained 80(4.4%). In age group from 0-10yrs the minimum age of the child was 5yrs.

Table 3: RTA injuries on various areas of the body

Valid	Frequency	%	Valid%	Cumulative %
Head & neck	650	36.1	36.1	36.1
Chest	100	5.6	5.6	41.6
Abdomen	51	2.8	2.8	44.5
Upper limb	700	38.9	38.9	83.3
Lower limb	300	16.7	16.7	100
Total	1801	100	100	

Table 3 showed out of 1801 RTA victims the most common injuries were found on upper limbs, 700(38.9%) and the 2nd most common injuries were found on Head & Neck, 650(36.1%), 3rd common injuries were found on lower limbs, 300(16.7%). Very least area of injuries on the body were found on abdomen, 51(2.8%), followed by the injuries on chest, 100(5.6%).

Table4 RTA Month wise admissions in Hospital

Valid	Frequency	%	Valid%	Cumulative %
Jan.	96	5.3	5.3	5.3
Feb.	152	8.4	8.4	13.8
March	137	7.6	7.6	21.4
April	134	7.4	7.4	28.8
May	178	9.9	9.9	38.7
June	203	11.3	11.3	50.0
July	139	7.7	7.7	57.7
August	194	10.8	10.8	68.5
Sept	133	7.4	7.4	75.8
October	170	9.4	9.4	85.3
Nov.	121	6.7	6.7	92.0
Dec.	144	8.0	8.0	100.0
Total	1801	100	100	

Table 4 showed month wise admissions of road traffic accident patients admitted to emergency

department of Sandman (Prov) hospital Quetta. A Highest percentage of admissions of RTA victims were seen in June 203(11.3%), 2nd highest percentage of RTA patients admissions were seen in August 194(10.8%), 3rd highest percentage of admissions of RTA patients were seen in May 178(9.9%) which was followed by October, 170(9.4%). A very least no of admissions of RTA patients were seen during January 96(5.3%) followed by November 121(6.7%) and a least number of admissions was seen in December 144(8%), which was followed by February 152(8.4%).

DISCUSSION

Medicolegal cases are an integral part of medical practice in emergency departments of major Hospitals¹³. Results of present study revealed 1801 patients were admitted during the year 2002, in which the majority of the patients were males 1400(77.7%) as compared to females 401(22.3%). Such type of results might be due to males are mobile and working in different territories and travelling across different areas as compared to females, which were preferred to remain in the homes. Such type of results was also found in another studies of Pakistan^{14,15}.

Road traffic injuries are among the three leading causes of death for people between 5 and 44 years of age and most common cause of death for people between 5 to 25 years of¹⁶.

In our study the most frequent cases of road traffic accidents were found at the age of 21-30yrs, 590(32.8%) and 2nd most common age group of 31-40yrs, 500(27.8%) and in 3rd most common age groups were 11-20yrs, 280(15.5%) which was followed by 41-50yrs containing 220(12.2%). The reasons for higher rate of RTIs amongst young drivers are minimal information about road safety and limited practice, Immaturity and inexperience particularly in the necessary driving skills and capabilities^{17,18}. Apart from these, young drivers are having "risk-taking behaviour", high levels of 'Sensation Seeking' or 'Thrill Seeking' behaviour¹⁸. Such sensation-seeking frequently focuses on risky behaviours, including while driving a vehicle or crossing a road¹⁸. Traffic overload is the major contributing factor for R.T.A. Some people violate the traffic rules and regulations and ultimately get involved in RTA²³. Hilly, tortuous and serpentine road is another factor for R.T.A²⁴. In Road Traffic Accidents, head injury is the most common cause of mortality followed by thoraco-abdominal and the musculoskeletal injuries in that Order^{19,20,21} but in our study the most common injuries were found on upper limbs and the 2nd most common injuries were found on Head & Neck, 650(36.1%), 3rd common injuries

were found on lower limbs, 300(16.7%). This study had several limitations. Injury surveillance was performed only in particular selected hospital. It is possible that RTA injuries of a minor nature which occurred away from city centres were not accounted for. Therefore, we were unable to present overall injury rates and mortality rates in this district. Moreover, the outcome of injuries was based only on the information available in the A&E department and patients were not followed up due to the limited resources available for the study^{8,22}.

CONCLUSION

1. Males were more commonly affected in R.T.A. as compared to females.
2. Most common age group in RTA was 21-30yrs.
3. Most common region involved was upper limb.

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