ORIGINAL ARTICLE

Pattern of Road Traffic Accidents Mortality in Rawalpindi and Islamabad- An Autopsy Based Study

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ABSTRACT

Objective: To find out the pattern, frequency and demographical aspects of road traffic accidents (RTA). To see/ suggest recommendations to institutions, administrations and planning authorities to take remedial steps for reducing RTA morbidities and mortalities.

Study Design: Cross-sectional study.

Place and duration of study: Mortuaries of Polyclinic Hospital, PIMS Hospital Islamabad and DHQ Hospital Rawalpindi. Study conducted between Sep 2018- March 2019.

Material and methods: The data was collected from the autopsy records of the mortuaries of the above mentioned hospitals. All 248 autopsies conducted during the study period were included but those died of natural cause were excluded. Data was collected from the records on pre-designed Perform which was analyzed in SPSS 23.

Results: RTA deaths comprised of 61(24.5%). All RTA deaths were accidental regarding manner of death. Age group effected the most were 18-40 years, 27(11.6%) followed by 41-60 years.11 (4.4%). Gender distribution revealed higher prevalence for males 129 (52%) than for female47 (19%). RTA deaths in urban and rural areas were 72 (29.2%) and 15(6%) respectively. Head injury was the major cause of death attributable to RTA 172 (69%) along with chest injuries 42 (17%), abdomen 11 (10%), pelvis 7 (3%). Pedestrians effected were 141 (57%) followed by two wheelers 59 (24%) and motor vehicles 48 (19%)

Conclusions: RTA were second main cause of unnatural deaths. Majorly caused by head injuries. Males, urban population, pedestrian and biwheelers were dominantly effected.

Key Words: Autopsy, road traffic accident.

INTRODUCTION

Road traffic accidents (RTA) are a significant global public health issue though it's avoidable but if not timely and appropriately addressed situation may steeply worsen, Low- and middle-income mount for 90% of worldwide deaths due to RTA[1, 2].RTA is eighth main cause of unnatural death worldwide accounting for 1.35 million lives and 20-50 million disabilities and injuries annually, largely affecting individuals in their most productive ages of ages between 15-29 years[3].It's a major neglected issue along with it's being a public health crisis it strains a country's economy and productivity of a nation.[4]. Thus control in high prevalence of RTA can be only attributed to a comprehensive strategy involving the enforcement of road safety policies and abidance to traffic.

Rapidly increasing vehicles, implementation of traffic laws, life style alterations, risk taking and aberrant conduct of drivers are considered to be principal contributory elements for road RTA.[5,6] Globally, Pakistan has world's worst records in road traffic safety[7]. The economic burden on account of RTA to Pakistan is 100 billion rupees[8]. Pakistan's mortality rate records on account of RTA is 14.3 per 100,000 population[9].In contrast to Japan and Canada with 1.7 and 1.6 fatality rate per 10,000 vehicles.[10]

Though a fall in RTA is observed in developed world in last two decades yet at the same time with 54% of total registered vehicles worldwide, a constant rise is witnessed for both low and middle income nations with prevalence of 90% of global RTAs, out of which 74% occur in low income countries [9,11]. Along with 90% of disability adjusted life years lost due to RTA.[12]Road traffic deaths in low, middle and high-income nations per 100,000 are 20.1, 18and 8.7 respectively. In low and middle income nations 80% road traffic mortalities occur [9]. A very high RTA death are observed in Dominican Republic 42 per 100,000 population.[13]

Conduct of the driver either intentional or unintentional is called as "cognitive-behavioral characteristics". Human factors account for 93% of traffic accidents, 34% RTA occur due to environmental deficiencies, and 12% RTA are associated to vehicle functions[14]. Body region involved in biwheelers accidents are usually injuries and fractures of extremities and head while abdominal injuries are commonly observed on car accidents occupant[15,16]. Comprehensive transport system with its diligent implementation using the relevant statistical data can help in reducing the mortality rate thus this study was conducted to assist the current situation in our study population. Reliable data on RTA mortalities is pivotal as being compromised due to underreporting. Keen supervision and assessment of the developed policies and strategies along with substantial viable data are vital for the accomplishment of the designated targets to reduce RTA associated injuries and deaths.

MATERIALS AND METHODS

A cross sectional study was conducted at Polyclinic Hospital Islamabad, PIMS Hospital Islamabad and DHQ Hospital Rawalpindi, from Sep 2018- March 2019. With the permission of the respective hospitalauthority's data was collected.All the 248 autopsies conducted during the study period were included of those who died of unnatural causes. Required data was taken from the postmortem reports andwas studied20. It was collected on a predesigned Performa, pertaining to prevalence of RTA deaths, its manner of deaths, physical location of the injuries, and the type of transportation/vehicle involved in RTA. Also demographical characteristics including age, gender, and residential status were collected. Autopsies conducted on those died of unnatural cause were included and those due to natural causes were excluded. Data was analyzed on SPSS version 23. Frequency and percentage were calculated for the variables.

RESULTS

RTA deaths were the second most common cause of all the unnatural death. All RTA deaths were accidental regarding manner of death found in 61 (24.56%) patients out of 248 autopsy cases as shown in figure 1.

Figure No 1: Prevalence of RTA among all the autopsy cases

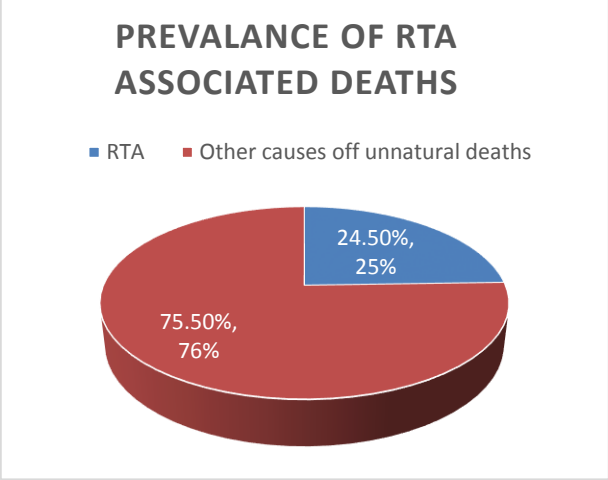


Table No 1: Demographics of RTA mortality patients

Variables	Frequency No.	%age
Gender		
Male	48	78.69
Female	13	21.31
Age (yrs)		
<13	3	4.92
13 to 17	14	22.95
18 to 40	29	47.54
41 to 60	11	18.03
Above 60	4	6.56
Residence		
Urban	42	68.85
Rural	19	31.15

Gender distribution for RTA deaths revealed higher prevalence for males 48 (78.69%) than for female in 13 (21.31%) patients. Majority of patients 29 (47.54%) were ages 18 to 40 years followed by 14 (22.95%) were ages 13 to 17 years, 11 (18.03%) were ages 41 to 60 years, 4 (6.56%) were ages above 60 years and 3 (4.92%) were ages <13 years. 19 (31.15%) patients had rural residency while 42 (68.85%) had urban residency. (Table 1)

Most of fatal injury in RTA were head injuries found in 42 (68.85%) patients followed by chest injury in 10 (16.39%) patients, 6 (9.84%) patients had abdominal injuries and 3 (4.92%) had pelvis injuries. (Figure 2)

Most the victims of RTA were pedestrians followed by two wheelers including bicyclist, motorcyclist and motor vehicle included cars, vans, buses and trucks as shown in figure 3.

Figure No 2: Body region associated to RTA deaths.

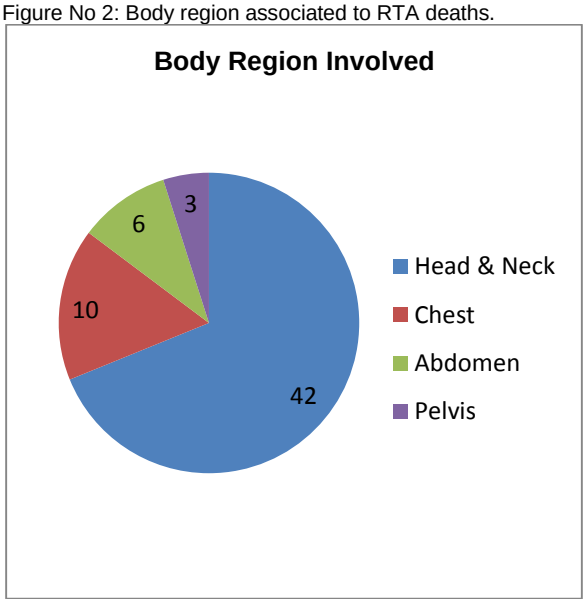
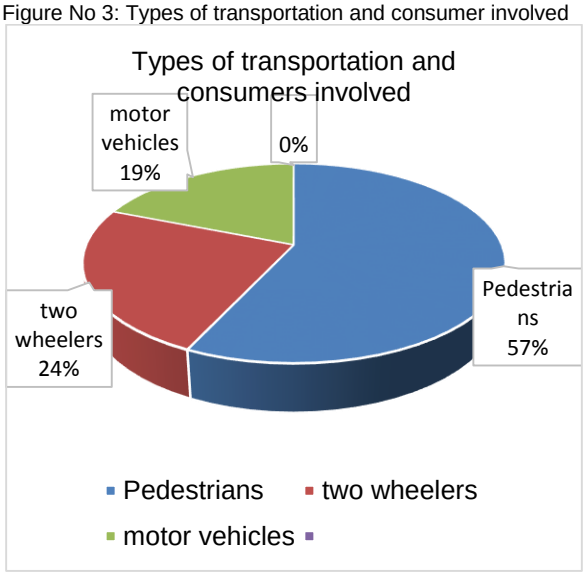


Figure No 3: Types of transportation and consumer involved



DISCUSSION

The study attempted to develop clearer understanding of the severity of the situation due to fatal consequences of RTA in Rawalpindi and Islamabad. Globally with rapid, unorganized urbanization along with startling rise in vehicles has resulted into steep rise in injuries and

mortalities. Laid over few decades, globally it has emerged as an issue of dire concern[14].

In Pakistan scenario regarding RTA is far more alarming then being reported, relatives usually refrain from filing FIRs and police reports for fear of being drag into legal proceedings, thus results into under reporting, Pakistan has high incidence of accidents about 30 accidents per 10,000 vehicles. It has a maximum mortality rate due to RTA about 5500 fatalities annually[15]. On contrary UK has lesser than 3500 fatalities annually with eight times more vehicles then Pakistan[16]. It's witnessed in our study RTA have quite high prevalence. In other cities of Pakistan as in Faisalabad and Multan it is observed to RTA associated deaths were 29% and 58% respectively, being the second main cause of unnatural deaths in both the studies.[17, 18] Likewise in Karachi RTA mortality were 28%.[19] While in Peshawar RTA comprised of 8.3% deaths[20].RTA associated injuries were 31% in Rawalpindi[21] on contrary to our study which included Islamabad, with much better traffic situation. Thus situation is reflected to be alarming similar to our study population in other cities of Pakistan.

Males RTA deaths in China were three times higher than for women and pupil with ages between 15 and 25 years were hit the most[22]. Likewise it was observed in Bangladesh males were five times more affected than females[23]. So was observed in Karachi with M:F ratio was 7:1 and majority of victims of RTA were 40%, in age groups between 19-35 years[24].Likewise in our study population almost similar results were witness. All these regions fall in densely populated area with similar RTA situation.

Globally RTA accounted for one of the major cause of mortality and disability among people in their second and third decades of life. It's amongst the three main causes of death in age group between 15–44 years[9]Individuals in their teens are around five folds at higher chances to suffer an accident than in those in third decade of life. Individuals in early phase of life are most active and reproductive phase of life, any damage to them causes a serious economic loss to the community[25]. It was observed prevalence of RTA in ages lesser and greater than 10 and 50 years respectively, exhibit decreasing trends as children are taken care of by elders and elders themselves are less mobile. In our society Males are dominantly victims of RTA being more involved in outdoor activities rendering them to RTA than females thus indirectly protecting them.[15]

In our study majority of the victim were pedestrians followed by two wheelers and motor vehicles unlike in Australia which could be due to mainly over crowded roadsides , use of wrong lanes of the road[26].

CONCLUSION

In view of the above finding, it is inevitable to conclude, RTAs to be an important public health issue. To address and mitigate RTAs and associated mortalities based upon the results observed by our study, emphasis on designing measures, preventive parameters and multipronged strategies by the authorities are required. Collaborative and integrated approach amongst departments like health, traffic police, transport, and law enforcement are vital to elevate the situation and their application for enforcement of abidance to traffic laws, road safety awareness to general public. Males in their most productive and active phase of lives are affected the most by RTA causing enormous financial constraints.

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