

Pedestrian injuries and fatalities by patterns in reported road traffic crashes — Islamabad

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Abstract

Objective: To find the main cause behind pedestrian injuries and fatalities and to categorise the information on the basis of key indicators.

Methods: The retrospective study was conducted in Islamabad, Pakistan, and was based on the officially-lodged First Information Reports of roadside accidents involving pedestrians over a period of 3 years from January 1, 2008, to December 31, 2010. The reports were collected from the Islamabad Police Department and relevant information was extracted on a pre-designed questionnaire having 40 kinds of variables. This study is limited only to causative factors and presentation of data according to age, gender, day and month which was analysed using simple descriptive percentage technique in SPSS 17.

Results: During the period covered by the study, there were 250 reported fatal traffic accidents causing 270 fatalities. Pedestrians were involved in 141 (56%) of these accidents in which there were 144 (53.3%) fatalities. Among the fatalities, there were 114 (79%) males and 30 (21%) females. Fatal accidents on midweek Wednesday were 27 (19%) which was more than the other days of the week. The highest number of pedestrian-related fatal accidents occurred in December 19 (13.5%). Over-speeding was the major causing factor 42 (29.8%) behind the fatalities.

Conclusion: Drivers are not giving the right of way to pedestrians and the pedestrians also did not use facilities like footpaths, zebra crossings etc.

Keywords: Fatalities, Injuries, Pedestrian, Road safety. (JPMA 64: 1162; 2014)

Introduction

Road Traffic Accident (RTA) occurs when a vehicle collides with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree or utility pole. Worldwide, RTAs lead to death and disability as well as financial cost to both society and the individual concerned.¹ Currently, RTA represents a common and burgeoning health problem.² Accidents are not only detrimental to human life, but also families that are left to grieve over the loss. On national level, many valuable lives are lost in traffic accidents every year which is a colossal loss to society.

World Health Organisation (WHO) reported in 2013 that fatal accidents cause more than 1.24 million fatalities globally. WHO also predicted that if they continued at the current pace, RTAs will become the fifth leading cause of death by 2030 as it is ninth in the list already.³ Additionally, about 27 per cent of these 1.24 million deaths occur among pedestrians and cyclists. In low and middle-income countries, the cyclists and pedestrians

contribute one-third of total road fatalities, whereas in some low-income countries it is up to 75 per cent. Despite these high proportions in deaths of pedestrians and cyclists in road accidents, only 79 countries have polices for protecting pedestrians and cyclists by separating them from motorised and high-speed traffic.⁴

Motor vehicle-pedestrian accidents are a significant source of injuries leading to death and disability and a major concern for public health, trauma medicine and traffic safety. Traditional views of pedestrian traffic safety tend to place the burden of responsibility on the behaviour of pedestrians and emphasise education as the means to prevent accidents. Previous research has established that pedestrians suffer very serious injuries compared to vehicle occupants. Pedestrians constitute one of the most vulnerable groups for road traffic injuries, constituting 60% to 80% of road fatalities in India.⁵ The analysis of 450 road fatalities during 1999 in Riyadh, the capital of Saudi Arabia, revealed that three-fourth of pedestrians were probably struck while crossing a roadway either not in a crosswalk or where no crosswalk existed.⁶

Pakistan has one of the world's worst records in traffic safety. Pakistan recorded 14.4 fatalities per 10,000 registered vehicles. In comparison, Japan recorded a

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fatality rate of 1.7 per 10,000 vehicles and Canada reports a fatality rate of 1.67 per 10,000 vehicles, while rates of motorisation in Japan and Canada are much higher than in Pakistan.⁷ Pakistan has the total road network of about 260,000 kilometres and caters to about 11 million vehicles of all types; representing 96% of inland freight and 92% of passenger traffic on the roads.⁸ The right of pedestrian is being violated which results in colossal loss to lives and economy. However, the loss is more than just numbers, as road traffic injuries push many families more deeply into poverty because of the loss of their breadwinners and to meet the livelihood needs by disabled persons.

The current study is an initiative to analyse the reported RTAs of Islamabad, the capital of Pakistan, in terms of pedestrian patterns. To the best of our knowledge, this is the first study of its nature as it uses primary data extracted from First Information Reports (FIRs) from the local Police Department related to pedestrian involvement in traffic accidents.

Materials and Methods

The retrospective study was conducted in Islamabad, Pakistan, and was based on the officially-logged FIRs of roadside accidents involving pedestrians over a period of 3 years from January 1, 2008, to December 31, 2010. The reports were collected from the Islamabad Police Department and relevant information was extracted on a pre-designed questionnaire after it was first pre-tested on a sample of FIRs. The filled questionnaires were then encoded into SPSS 17.0 for further pattern analysis; the main objective being to get the information categorised. Part of a larger initiative, this study is limited only to causative factors and presentation of data according to age, gender, day and month.

Results

Of the 603 officially-logged FIRs of RTAs, 232(38.5%) involved pedestrians. In terms of fatal traffic accidents, there were 250 causing 270 fatalities. Pedestrians were involved in 141(56%) of these accidents in which there were 144(53.3%) fatalities. Among the fatalities, there were 114(79%) males and 30(21%) females. Besides, there were 91 (39.2%) non-fatal accidents involving pedestrians (Table-1).

Table-1: Pedestrian accident outcomes by gender.

Gender	Fatal Accident		Non-Fatal Accident
	Fatalities	Injuries	Injuries
Male	114 (79%)	17 (14%)	77 (63.6%)
Female	30 (21%)	2 (1.7%)	25 (20.7%)
Total	144		121

Table-2: Pedestrian's Road Traffic Accident Causing Factors.

Causing Factor	Accident Outcomes		Total
	Fatal Accident	Non-Fatal Accident	
Over-speeding	42 (29.8%)	27 (29.7%)	69 (29.7%)
Overtaking	0	3 (3.3%)	3 (1.3%)
Reckless driving	25 (17.7%)	18 (19.8%)	43 (18.5%)
Other	5 (3.5%)	3 (3.3%)	8 (3.4%)
Over-speeding and reckless driving	69 (48.9%)	40 (43.9%)	109 (47%)
Total	141	91	232

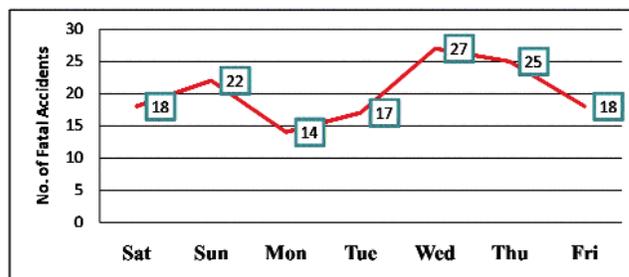


Figure-1: Pedestrian's Fatal Accidents during Different Days of the Week (numbers).

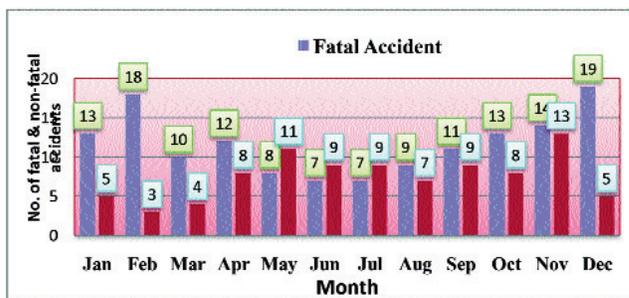


Figure-2: Month-wise Pedestrian's Accidents outcomes (numbers).

Most of the pedestrian's fatal accidents (59.57%) occurred from 6am to 6pm, followed by (28.37%) from 6pm to 6am. In 12.06% accidents, the time of the accident was not mentioned. Corresponding data for non-fatal accidents was 54.95%, 27.47% and 17.58% respectively.

Fatal accidents on midweek Wednesday were 27(19%) which was more than the other days of the week (Figure-1).

Besides, the highest number of pedestrian-related fatal accidents occurred in the month of December 19(13.5%) (Figure-2).

People in the age group of 45-60 years were involved in majority of the accidents 42(29.7%) (Figure-3).

As for the causative factors, over-speeding accounted for 42(29.8%) fatalities, while reckless driving killed 25



Figure-3: Number of Pedestrian's Fatalities by Age group.

(17.7%). The most number of pedestrians killed 69 (48.9%) were in accidents in which the driver concerned was committing the two acts — over-speeding and reckless driving — together (Table-2). Additionally, over-speeding and reckless driving together accounted for 40(43.95%) of the non-fatal accidents involving pedestrians.

Discussion

Pedestrian fatalities have increased in recent years because of driver's poor response in attending to the accident victims.⁹ The current study's results are consistent with previous reports that male fatalities and injuries were more than the female ones.¹⁰⁻¹⁵ In the present study, most of the pedestrian accidents occurred on Wednesday (27) followed by Thursday (24) and Sunday (22), which are similar with other studies.^{10,16} Most of the accidents occurred in December (19) followed by February (18), whereas less number of fatal accidents occurred in June, July and August. The findings are consistent with previous studies as in winter (November to February) more accidents occurred compared to the summer.^{8,17,18} The analysis showed that young and old age groups of pedestrians were mostly affected in both fatalities and injuries. These results are also consistent with other studies.¹⁹⁻²² In the present study, it was found that driver's fault contributed more in pedestrian fatalities and injuries compared to mechanical failures. Mostly over-speeding and reckless driving (combined) are the major causing factors in the driver's fault.^{6,23,24}

There are several limitations of this study. Firstly, it is based on police record alone and does not include hospital records. Previous studies have shown that police information system does not always provide relevant details.²⁴ Secondly, the data was extracted from the study report²⁵ which was based on the data of about 2 years ago and only for a 3-year period. Thirdly, data extraction from FIRs was a tedious task because of the ambiguous language of the FIRs and there is a potential risk of misinterpretation.

Conclusions

Drivers need to be trained and educated to give the right of way to pedestrians on the roads. Besides, reporting mechanism is unsatisfactory. Road accidents are reported on FIRs like robberies, theft etc. This system of reporting should be improved by using Special Accident Reporting Form (SARF). This implies the usage of specialised forms for recording road accidents that collect information regarding vehicles, victims, circumstances, the environment, the causing factors, cost of damage and trauma responses

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