Profile of Fatal Two Wheeler Accidental Cases In Ahmedabad

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Abstract: Background and objective: In these days of fast life every person wants to save his/her time. But unfortunately some becomes victim of accidents. Objective of this study is to analyze age, sex and time distribution, area of accidents, type of rider and protection used in deceased in two wheeler road traffic accidents. Methodology: The present study was conducted in the department of Forensic Medicine, B.J. Medical College, Ahmedabad. The study included 100 cases of fatal two wheeler accidents occurred during the time between January 2011 to June 2011. Results: in the two wheeler accidental deaths most commonly involved age group is 31-40, males are predominant, more in urban area, drivers are more affected, occur more in evening time and non protected are more affected. Conclusion: it can be concluded that careful driving should be done at the evening time, and Helmet/protection must be used and everyone must follow the traffic rules. [Patel A et al NJIRM 2013; 4(1) : 45-48]

Key Words: two wheelers, accident, death.

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Introduction: The process of rapid urbanization has resulted in revolutionary growth of motor vehicles worldwide. This motorized transportation media like scooters, cars, buses, trains, aeroplanes etc., with fast moving traffic, vast urbanization and changing social and personal patterns, have contributed to an increase in the incidence of harm to human body. In the modern era, with rapid industrialization, the increased number of different types of vehicles moving fast on the roads result in the mass rise in the traffic accidents. In the year 2010 total number of two wheelers in Gujarat was exceeding 90 lakhs.

In a dubious distinction for the country, the World Health Organization has revealed in its First ever Global Status Report on Road Safety that more people die in road accidents in India than anywhere else in the world, including the more populous China. Worldwide, the number of people killed in road traffic accidents (RTA) each year is estimated at almost 1.2 million, while the number of injured could be as high as 50 million. Accidental deaths today are one of the leading causes of death. In some countries road traffic accidents are number one cause of deaths; especially in many parts of the world particularly the highly industrialized countries. The alarming increase in mortality owing to road traffic accidents over the past few decades is a great concern globally. Currently motor vehicle accidents rank fifth in order of disease burden and are projected to be ranked third in the year 2020[1].

Material & Methods: The study comprised of the victims of two- wheeler road traffic accidents brought to Civil Hospital, Ahmedabad, attached with B.J. Medical College, Ahmedabd. The cases were brought directly from the site of accident or referred from peripheral health facilities around Ahmedabad, as this hospital is well equipped to handle complicated cases and emergencies.

The study included 100 post-mortem cases from the mortuary, details of which had been recorded and the data pertaining to age, sex, rural and urban distribution, type of rider, time of accidents, and role of use of helmet in protection of victims in two wheeler accidents was recorded. The information was collected from the relatives, police or persons accompanying the dead body. The data thus collected was analyzed statistically.

Observations: The age of the victims varied from 0 to above 60 years. The peak incidence of fatal accidents was observed in the age group 31-40 years comprising 33 % of the cases and 29% belonged to the age group 41-50 years. 15% of deaths occurred in age group of 21-30 years and 9 % of cases comprised of 11-20 years and 7 % for age group 51-60 and above 60 years in the study. Individuals in the age group 51 to 60 years were the least affected (7%) with no death in age group

of 1 to 10 years. The lowest age of victim was 10 years and the highest age was 82 years (Table 1).

Table 1: Age wise distribution of cases in fatal two wheeler accidents

age groups (in years)	No. Of deceased	Percentage
0-10	-	-
11-20	9	9
21-30	15	15
31-40	33	33
41-50	29	29
51-60	7	7
>60	7	7
Total	100	100

In fatal accidents males comprised a majority and constituted 92cases (92%) as compared to females who were only 8 (8%). The male to female ratio in the study was 11.50:1 (Male=92, Female=8) (Table 2).

Table 2: Sex wise distribution of cases in fatal two wheeler accidents

Sex	No. Of deceased	Percentage
Male	92	92
Female	8	8
Total	100	100

In fatal accidents, 80 cases (80 %) occurred in urban area and 20 cases (20 %) were in rural area (Table 3).

Table 3: Distribution of cases of fatal two wheeler accidents in rural and urban areas

Area	Total cases	P.M percentage
Rural	20	20
Urban	80	80
Total	100	100

In fatal accidents 75 (75%) victims were the drivers and 25 (25%) were the pillion riders (Table 4).

Table 4 Type of rider involved in fatal two wheeler accidents

Type	No. Of deceased	Percentage
Driver	75	75
Pillion/ rider	25	25
Total	100	100

Time of accident was divided into morning (6 am to 12 pm), noon (12 pm to 4 pm), evening (4 pm to 8 pm) and night (8 pm to 6 am). Most of the fatal accidents irrespective of cause occurred in the evening comprising 44(44%) of total cases, while 24(24%), 21(21%) 11(11%) cases were reported during night, noon and morning respectively. Maximum accidents occurred between 4 pm to 6 am (Table 5).

Table 5: Time of fatal two wheeler accidents

Time	No. Of deceased	Percentage
Morning	11	11
Noon	21	21
Evening	44	44
Night	24	24
Total	100	100

Those who were not wearing any protection survive for period no longer than 2 hours. While those who used helmet as protection survive for 5 to 6 hours, even they died. However both type of victims died in accidents (Table 6).

Table 6: Relation between usage of protection and time of survival in fatal two wheeler accidents

Mode of protection	Time of survival in hours	No. of deaths	Percentage
Non users	1 to 2 hours	95	95
Helmet users	5 to 6 hours	5	5
Total		100	100

Discussion: In the present study maximum no. of victims killed in accidents of two wheeler vehicles were in the age group of 31-40 years of age (33%) followed by the age group of 41-50 years (29%). Similar results were shown by the studies of Oberoi et al[2], Shivkumar et al[3]**.** while in stidy of Tandle et al[4] and Menon et al[5] the most common age group affected is 21-30. Wang SY et al[6] analyzed that 60% of victims of the motor vehicle deaths were young males in age group 20-50 years. Hingson R et al[7] studied that the male drivers with age group 22-45 years were the most

involved age group in the road accidents found the most vulnerable age group to be between 21-30 years.

Males compared to females as the principle victims- 92% of the male victims died in the accidents as compared to 8% deaths of female victims in the accidents. The male female ratio was 92:8, which implied that for every 92 males only 8 females died in fatal accidents occurring on the roads of Ahmedabad and nearby areas. Tandle et al[4], Sharma D[8], oberoi et al[2] Pathak A[8] conducted study on victims of the accidents and revealed that adult males had predominance over females. The reason of male predominance could probably be due to the tendency of not following the traffic rules and regulations and possession of illegal fake driving licenses.

Comparing rural and urban accidents, it was found that fatal (80%) two wheeler accidents occurring in urban areas outnumbered fatal (20%) two wheeler accidents occurring in rural areas of Ahmedabad. Rodriguez DY et al[10] studied that death from road accidents predominated in urban areas. This trend could probably due to the more population ratio per square kilometre in cities as compared to rural areas and encroachment of roads by the hawkers, shops and rickshaws which obscured the path for the two wheeler vehicles.

Majority of the victims (75%) were drivers of the two wheelers and the pillion riders accounted for (25%) of fatal accidents. Chao et al[11] showed that motor cycle riders are more prone to road fatality than other road user groups. The reason could probably be due to head on collisions between the vehicles which made the riders more prone to be the victims.

Most of the fatal accidents (44%) took place in the evening time followed by 24% occurring in night time. Pathak A[9] studied that in evening and night time, number of accidents are more common. Singh H[12] showed that most accidents had taken place during the afternoon hours.

Another major factor leading to deaths in two wheeler accidents was not wearing the helmet while driving the two wheeler vehicles. But dramatically in this study all 5 victims who wore Helmet, they died too. Sharma R et al[13] reported that 72.1% of two wheeler riders "not always" and 23.3% reported "never" wearing a helmet and almost 77.5% were "at risk" as far as behaviours related to safety on roads were concerned. Helmets have shown to decrease the risk and occurrence of both head injuries and fatalities in motorcycle crashes, along with a decrease in hospitalizations and healthcare costs.

Conclusion: The traffic accidents pose a problem to whole world. There is abundant literature on various aspects of traffic accidents and their prevention.

This study included 100 cases from the mortuary details of which had been recorded regarding age, sex, rural and urban distribution, type of rider, time of accidents and role of use of helmet in protection of victims in two wheeler accidents. The information was collected from the relatives or persons accompanying the dead body. The data thus collected was analyzed statistically. Persons belonging to 21-30 years and 31-40 years age group were involved more, considering the total number of cases. Among the two wheelers, scooters and motorcycles involvement predominated. This may be due to bad roads, lack of road driving sense and lack of knowledge of traffic rules. Rural population was involved in 20% of fatal accidents, whereas 80% of fatal cases were from urban area. As for sex wise distribution, the victims involved were 8 females (8%) and 92 males (92%) in fatal accidents.

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