

Original Research Article

Audit on roadside Accident Cases and severity happening in Indore city, presenting to MYH Casualty, Indore

ABSTRACT

Introduction Road traffic accidents take away the right to life of 3,000 people every day worldwide. This is a global humanitarian disaster, it is man-made and preventable(5-8). Accidents are a drain on the national economy and may lead to disablement, death, damage to health and property, social suffering and general degradation of environment(9-11). India had earned the dubious distinction of having more number of fatalities due to road accidents in the world. Road safety is emerging as a major social concern around the world especially in India

Materials and methods The prospective observational study was carried out on 1000 RTA cases presented in MYH trauma center,INDORE from May 2018 to April 2019. All patients of road side accidents presenting to trauma centre underwent a detailed history taking including general examination after their primary management.

Results Out of 1000 cases 277 were fatal, 385 were considered under grievously injured & 338 cases had simple injury. Among the fatalities, 32 cases were brought dead. The vehicle majorly found to be involved in the RTAs were 2-wheeler (76.90%), 3-wheeler (3.35%), 4-wheeler (6.2%) and others (13.6%). Out of total no of accident cases of 2 wheelers (769) only 27.1 % person were using helmet and 72.6% persons were not using helmet. In the comparison of severity of injury and use of helmet, among the total no of fatality in 2 wheelers,36% fatal injury occurred in person not wearing the helmet.

Conclusion Road Traffic Accident problem is increasingly becoming a public health problem. They result not only in death but disability among survivors who can burden to the society. RTA victims predominantly belonged to the younger age group.

Keywords:- MYH trauma centre, preventable, helmet, seatbelt, alcohol

INTRODUCTION

Every year 1.2 million people are killed and approximately 20-50 million people are grievously injured in road accidents.(3) If current scenario continue road traffic accidents are predicted to be third leading contributor to the global burden of Disease and injury by 2020 (Torregrosa et al., 2012).(1-4)India had earned the major distinction of having more number of fatalities due to road accidents in the world. Road safety is popping as a major social concern around the world especially in India (Shiv kumar and Krishnaraj, 2012). This paper aims to describe the factors associated with RTAs in indore city.(14,15)

-At every turn, we inevitably come back to the three main factors involved in any accident on the roads: the driver, the vehicle and the roadway.

-Indore has emerged as the fourth most accident prone city in the country after Mumbai, Delhi and Chennai with 444 people losing their lives in road accidents in 2015. Indore recorded 5,873 accidents in 2015, and was placed after Mumbai with 23,468 accidents, Delhi 8,085 accidents and Chennai 7,328 accidents, in the road accident profile of cities with over 10 lakh population released by ministry of transport and highways.(12,13)

METHOD

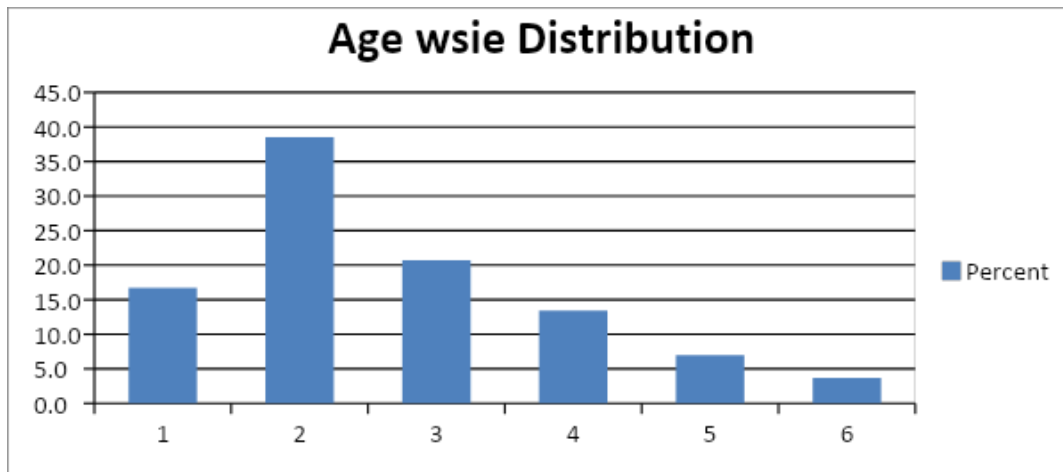
A prospective observational study was carried out on 1000 RTA cases presented in MYH hospital trauma center between May 2018 to April 2019. All patients of road side accidents presenting to trauma center underwent a detailed history taking including general examination after their primary management. A Questionnaire was filled according to the history provided by the attender or patient himself/herself. After the proper examination and relevant investigations, injuries were categorized under simple, grievous & fatal.

OBSERVATION AND RESULTS

Table 1: Age wise distribution

AGE GROUP	Frequency	%
<=20	167	16.7
21-30	385	38.5
31-40	207	20.7
41-50	134	13.4
51-60	70	7.0
>=61	37	3.7
Total	1000	100.0

Graphs 01 – showing Age wise distribution in NO of RTA cases

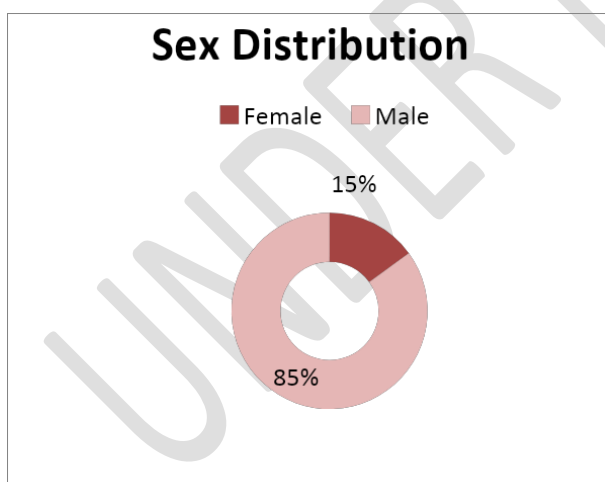


The most affected age group was found to be 21-30 years (38.5%), 31-40 year (20.7%) & <20 years (16.7%).

Table 2: sex wise distribution

Sex	Frequency	%
Female	150	15.0
Male	850	85.0
Total	1000	100.0

Graph02- Showing sex wise distribution in NO of RTA cases



Gender-wise distribution of the RTAs shows that the males (85%) are almost 6 times more affected than females (15%).

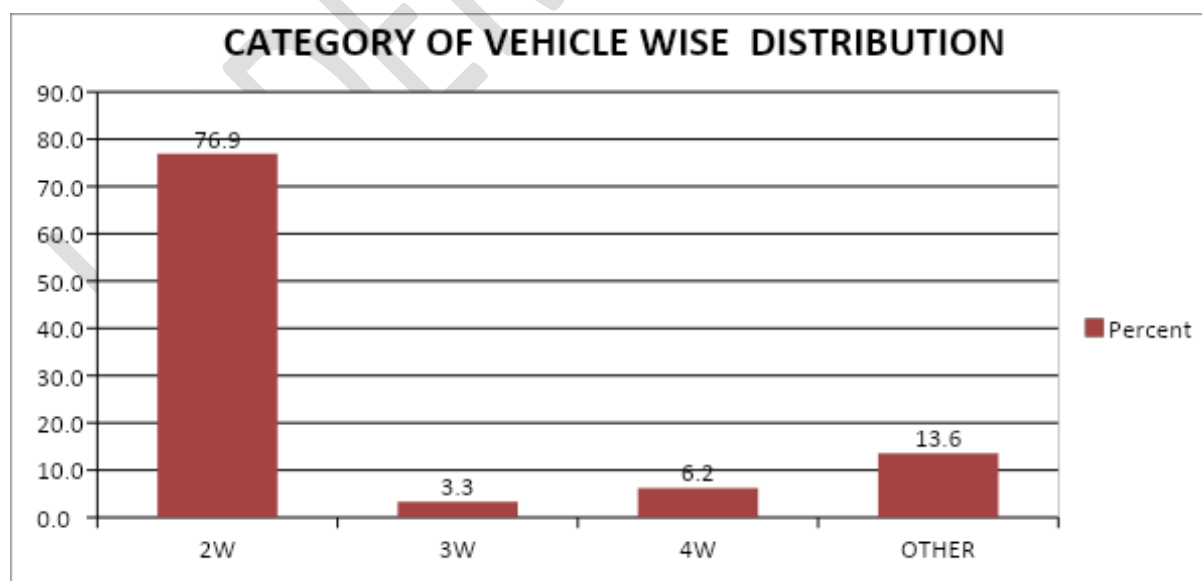
Table 3: severity wise distribution

SEVERITY of INJURY	Frequency	Percent
Simple	338	33.8
Grievous	385	38.5
Fatal	277	27.7
Total	1000	100

Out of 1000 cases 277 were fatal, 385 were considered under seriously injured & 338 cases had simple injury. Among the fatalities, 32 cases were brought dead.

Table no. 4 : Category of vehicle wise distribution in NO of RTA cases

RTA	Frequency	%
2W	769	76.9
3W	33	3.3
4W	62	6.2
OTHER	136	13.6
Total	1000	100.0

Graph 03- Showing Category of vehicle wise distribution in NO of RTA cases

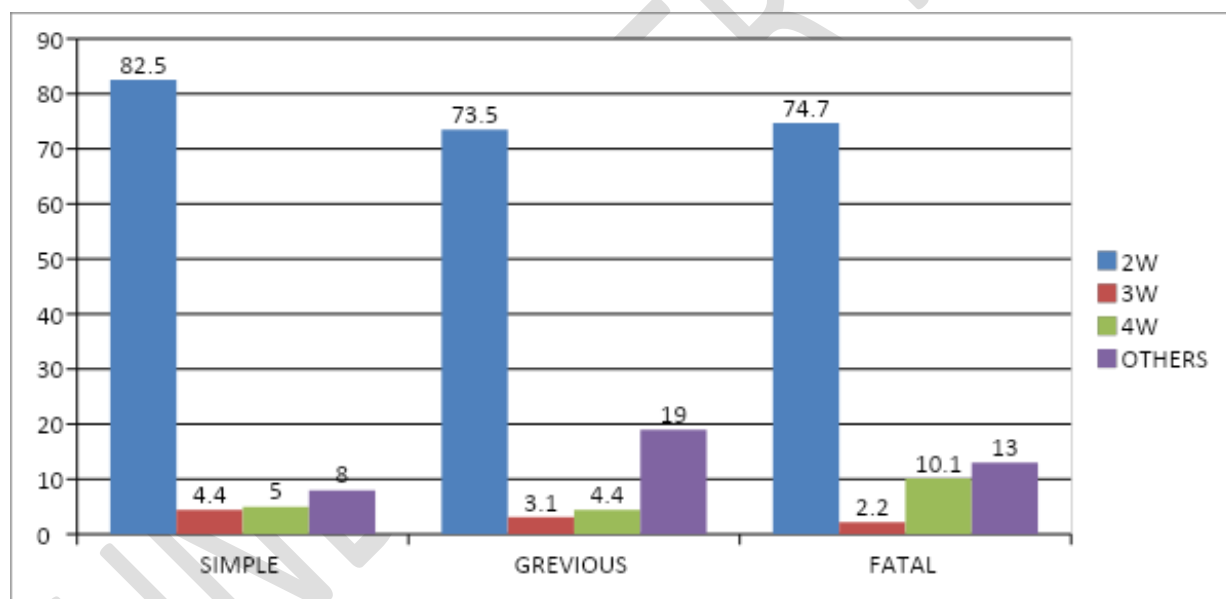
The vehicle majorly found to be involved in the RTAs are 2-wheeler (76.90%), 3-wheeler (3.3%), 4-wheeler (6.2%) and Others (13.6%).

Table No.5: Severity of injury wise comparison of category of vehicle accused in Road Traffic Accidents

SEVERITY OF INJURY		VEHICLE CATEGORY				Total
		2W	3W	4W	OTHER	
Simple	Count	279	15	17	27	338
	%	82.5%	4.4%	5.0%	8.0%	100.0%
Grievous	Count	283	12	17	73	385
	%	73.5%	3.1%	4.4%	19.0%	100.0%
Fatal	Count	207	6	28	36	277
	%	74.7%	2.2%	10.1%	13.0%	100.0%
Total	Count	769	33	62	136	1000
	%	76.9%	3.3%	6.2%	13.6%	100.0%

Chi Square Test = 30.177, df = 6, P value = 0.000 Significant

Graph 04- Showing severity of injury wise comparison of category of vehicle

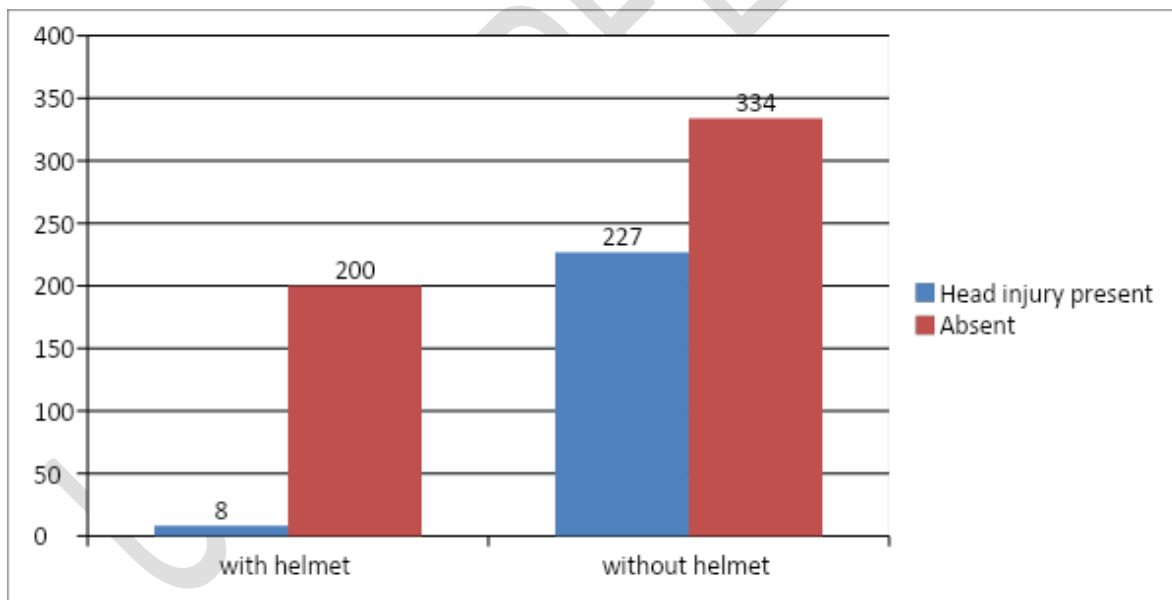


In fatal cases, the share of 2 wheeler is very much higher (74.7%), then 3 wheeler (2.2%), 4 wheeler (10.1%), and others (13%). There is statistically significant difference between severity of the injury and type of vehicle involved.

Table No.6: Comparison between use of Helmet and head injury

HELMET		HEAD INJURY		Total
		YES	NO	
YES	Count	8	200	208
	%	3.8%	96.1%	100.0%
NO	Count	227	334	554
	%	40.4%	59.3%	100.0%

Graph5- Comparison between use of Helmet and head injury

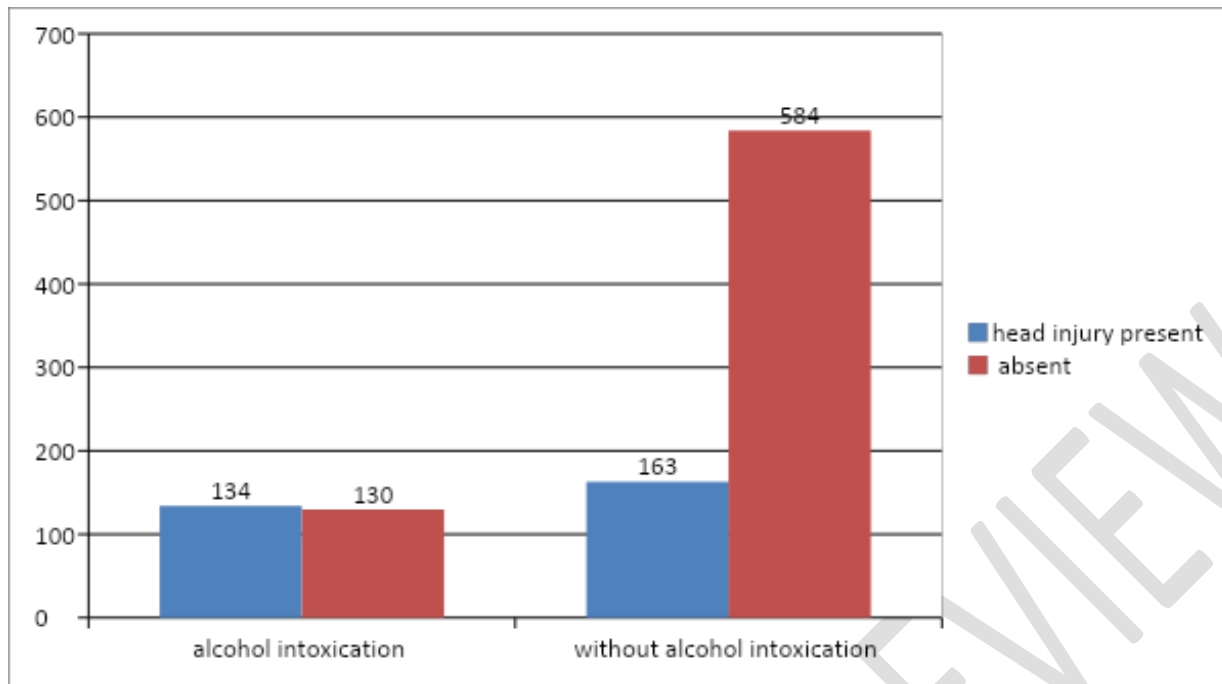


Among the total no the persons wearing helmet only 3.8% persons having head injury, and 40.4% persons having head injury in the persons who were not wearing the helmet.

Table No.7: comparison between alcohol influence and Head injury

ALCOHOL		HEAD INJURY		Total
		YES	NO	
YES	Count	134	130	253
	%	53%	47%	100%
NO	Count	163	584	747
	%	21.8%	78.2%	1000

Graph6: Comparison between use of alcohol and head injury



Among the total no the persons with alcohol influence 53% persons having head injury, and 21.8% persons having head injury in the persons without alcohol influence.

DISCUSSION

The study shows that, the mean age of RTA victims is 33.10 yrs. The most affected age group was found to be 21-30 years (37.5%), 31-40 year (19.9%) & <20 years (17.3%). (table1 & graph 1)

Out of 1000 cases 277 were fatal, 385 were grievously injured & 338 cases had simple injury(table3). It is interesting to note that among all fatal accidents, 21-30 years age group reported higher fatal accidents (36.7%) than 31-40 years (20.2%) as compared to overall accident scenario. Gender-wise distribution of the RTAs shows that the males (85%) are almost 6 times more affected than females (15%)(table2 & graph2).

Among the 1000 cases, 32 (3.2%) case records have clear evidence of spot death. Out of these 32 spot deaths.(table3).The vehicle majorly found to be involved in the RTAs were 2-wheeler (76.90%), 3-wheeler

(3.35%), 4-wheeler (6.2%) and others (13.6%)(table 4 & graph 3). In fatal cases, the share of 2 wheeler is much higher (74.7%), than 3wheeler (2.2%), 4 wheeler (10.1%), and others (13%)(table5 & graph4).While the highest proportion in serious & simple injury category was also in 2 wheelers (73.5%) & (82.5%).So, 2wheeler are most commonly associated with accidents or mishaps.

Out of total no of accident cases of 2 wheelers (769) only 27.1 % person were using helmet and 72.6% persons were not using helmet. Among the total no. of persons wearing helmet, only 3.8% persons had head injury, and 40.4% head injury occurred in persons who were not wearing the helmet.(table6 & graph5)

Among the 1000 accident cases 25.3 % person were under the influence of alcohol and 51.6% fatal cases happened when the driver was under the influence of alcohol at the time of accident.(table7 & graph6)

CONCLUSION

Road Traffic Accident problem is increasingly becoming a public health problem. They result not only in death but disability among survivors who can burden to the society.

From the above observations and results, we can infer that RTA victims predominantly belonged to the younger age group. Good number of drivers found to be under influence of alcohol.

Aiming to save time and extra ride for a kilometre, motorists and car drivers often go to wrong direction to cross the road. this is leading to frequent accidents on road.

The segregation of traffic especially pedestrian is very important from the standpoint of accident prevention

To sum up, younger age group, alcohol intoxication, careless attitude by pedestrians, road conditions, light condition, violation of traffic rules, presence/absence of traffic signals at crowded area & speed breakers are responsible for considerable mortality & morbidity in Road Traffic Accidents.

REFERENCES

1. Trivedi C.R., "Epidemiology of fatal accidents", Indian Journal of Surgery, vol. 43, no. 2-3, February-March, 1981, p. 171-174
2. WHO Regional Office for Europe, "Psychosocial factors related to accidents in childhood and adolescence, Report on a WHO technical group, 1981 (Euro reports & study no. 46), p.6
3. "Textbook of Preventive and Social Medicine", Park k., 16th edition, 2000, ch.2, p.12.
4. Alma-Ata; Primary Health Care, Geneva, WHO, 1978 ("Health for all" series no. 1)

5. Norman L.G., "Road Traffic Accidents – Epidemiology, Control and Prevention" Public Health Paper – 12, 1962, WHO, p.7
6. Romer C.J., Manciaux M, Accidents in childhood & adolescence: A priority problem worldwide,
In "Accidents in Childhood & Adolescence", WHO, 1991, p.1
7. WHO Technical Report Series, No. 118, 1957, "Accidents in childhood – Facts as a basis for prevention", report of an advisory group.
8. Waller J.A., Accident prevention: the role of research, In "Accidents in Childhood & Adolescence", WHO, 1991, p.191
9. Baker S.P., O'Neill B., Karpf R.S., The Injury Fact Book. Lexington Books, D.C. Health and Company/Lexington, Massachusetts/Toronto, 1984
10. Berfenstam R., et al, "Prevention of accidents in childhood" – a symposium in the series of congresses and conferences celebrating the 500th anniversary of Uppsala University, held at the Department of Social Medicine, University Hospital, 5-7 October 1977.
11. Hogarth J., Glossary of Health Care Terminology, WHO, Copenhagen
12. Trivedi C.R., "Emotional factors in Accidents"; the clinical reporter, Vol. II, No. 8, August 1978
13. Clarke D.D., Forsyth R, Wright R; Behavioural factors in accidents at road junctions: the use of a genetic algorithm to extract descriptive rules from police case files. *Accid Anal Prev (ENGLAND)* Mar 1998 30 (2) p223-34 ISSN: 0001-4575
14. Grattan E., Keigan M.E.; Patterns and severity of injury in a hospital sample; paper read at the Fifth International Conference of the International Association for Accident and Traffic Medicine, London, 1-5 September 1975.
15. United Nations Economic Commission for Europe, Statistics of Road Traffic Accidents in Europe; 1973, New York, United Nations, 1974