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An Epidemiological Study Of Road Traffic Accident Cases Attending A Tertiary Care Hospital, BG Nagara, Mandya District, Karnataka State, India.

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ABSTRACT

The demographic transition leads to rapid growth in industrialization, urbanization and increase in population which in turn results in rapid increase in the number of vehicles on inadequate road width. This transition made the road traffic accidents as the third most common cause of death among non communicable disease. Objectives of the study is to assess the status of head injury using glasscow coma scale among road traffic accidents cases coming to a tertiary care hospital in B.G. Nagara, Mandya district, Karnataka state and to know the various epidemiological factors (human and environmental factors) related to road traffic accident cases. A Hospital based descriptive cross-sectional study was undertaken at Adichunchanagiri Hospital and Research Centre, a tertiary care hospital, Nagamangala taluk, Mandya district to assess the status of head injury and epidemiological factors responsible for Road Traffic Accidents. About 1204 RTI victims out of 536 Road traffic accidents were interviewed with a semi structured and pretested questionnaire during July 2021 to June 2022. Majority of victims were males (82.1%) in the age group of 15 to 30 years (47.6%). Maximum number of victims were educated up to PUC (27.4%) and 15.4% were illiterates. About 8% of victims had head injury with majority showed GCS < 3(58.3%). Majorities were drivers (68.6%) involved with a peak during weekends (57.4%), in the evening hours (23.8%) and during the month of June (19.1%). About 29.7% gave inadequate visibility and 18.5% gave alcohol consumption as the reason for the RTA. The current study results observed that males in the productive age group of 15 to 30 years were majority victims of RTA and so making economic loss and burden on the family. Awareness should be created to prevent RTA and its mortality and morbidity. **Keywords:** Road traffic accident, Head injury, Epidemiological factors, Glasgow coma scale.

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INTRODUCTION

Road traffic accident is a major global public health problem, requiring lot of efforts for its prevention. Out of all works that people have to deal with on a daily basis; road transport is the most dangerous. All over the world, the number of people killed in road traffic crashes each year was around 1.2 million, however the number of injured were around 50 million. But this attracts less attention of the media than other, less frequent and rare tragedy types [1].

Road traffic injury is the only public health problem for which the policy and decision makers are accepting the mortality and morbidity among young aged people on a large scale [2]. In India the health scenario has changed due to demographic transition and shift in health problems and priorities has made the non-communicable diseases to the forefront of health care delivery system. Among the emerging public health problems, injuries due to Road traffic accident occupy a significant place. The industrialization and rapid urbanization with motorization and changing life style worsens the mortality and morbidity due to Road traffic accidents. This phenomenal increase in morbidity, mortality disability and socio-economic impact from road traffic accidents, during the past decade is a matter of increasing concern among policy makers and professionals [3]. In the year 2002, there were around 1.19 million deaths were reported and around 50-100 minor injuries and 10-20 major injuries for every death which requires a long period of expensive care [4]. Road traffic accidents are a global public health epidemic. WHO data says road traffic accidents account for around 25% of all deaths from injury. Road traffic accidents (RTAs) are the major cause of mortality and morbidity among adult men aged 14 to 45 years worldwide [5].

In many counties, motor vehicle accidents rank first among all fatal accidents. Every year 1.3 million people die from road traffic accidents in the world. In addition, for every death there are as many as 20 – 50 non fatal injuries requiring long periods of expensive care, nursing and treatment. Road traffic fatality rate is higher in younger age group. Children and young people under the age of 25 years account for over 30 percent of those killed in road accidents. In all the countries, young age group males are more likely to get injured in Road traffic accident than females. Among drivers, young males of age less than of 25 years are almost 3 times more vulnerable to be killed in a car crash as young females. Around 46% are vulnerable population like cyclists, motor cyclists and pedestrians of those dying due to RTA. Compared to cars, the two wheelers are unstable and give little protection for their drivers in accidents. In developed countries, four wheelers are more frequently involved in accidents as compared to that of developing countries. More than 90 percent deaths from road traffic injuries occur in middle-income countries. Even in the developed countries, the lower socio-economic people are more involved in road traffic accidents. In the year 2000, around 1.26 million people were died worldwide as a result of Road traffic injuries.

India has one of the highest road accidents in the world. During the year 2011, a total of 4.4 lakh road accidents were reported in the country. The rate of death per thousand vehicles has decreased from 1.6 in 2007 to 1.2 in 2011. Nearly 80,000 get killed and 340000 are injured every year in about 300000 accidents on road network of 2200000 km. There is an accident every minute and a death every 8 minute. Nearly 22.4 percent victims of road traffic accidents were two wheeler occupants. Maximum percent of accidents occurred between 3pm to 6 pm time period [6].

Karnataka has earned the distinction of the being the state with the third highest accident rate in India following Tamil Nadu and Maharashtra. The National Crime Records Bureau Statistics shows that at least 23 people die every day in Karnataka. In 2006 there were 43,280 accidents; it rose to 45,284 in 2007 with 18,686 deaths in the state. Few more factors such as the political instability and universal availability of alcohol influences road traffic accidents in Karnataka [4,7]. In Mandya district there are 24 state high ways and 211 major district roads with average total length of 3435 kilometers [8].

As early as in 1961, the celebration of the World Health Day with the theme of “accidents need not happen” followed “a little safety prevents a big accident”. Then later in 2004, World Health Day was celebrated with the theme of “Road safety is no accident”. In 2004, World Health Day, for the first time dedicated to Road Safety. Every year, around 1.2 million people lose their life in road accidents all over the world. Millions of others sustain injuries and permanent disabilities. Road safety is thus a major public health issue throughout the world [1]. There is an urgent need to recognize the worsening situation in road deaths and injuries and to take appropriate action. Road traffic accident prevention should be given the same attention and scale of resources that is presently paid to other health issues if increasing human loss and injury on the roads, with its bad impact and huge economic loss, are to be averted



[2].

It becomes the need of the hour to provide enough evidence on the epidemiological factors influencing Road Traffic Accidents to assist government policy makers, health professionals and the public in creating awareness and to adopt preventive measures. As no studies were carried out so far in B.G.Nagara, present study was conducted to determine the status of head injury of victims the road traffic accident and the epidemiological factors influencing Road Traffic Accident cases attending a tertiary care hospital, B.G.Nagara. The results of this study would provide necessary inputs for effective measures on preventing the Road Traffic Accidents in this region and also in other regions for comparison and simulation.

Objectives of the study

- To assess the status of head injury using glasscow coma scale among road traffic accidents cases coming to a tertiary care hospital in B.G.Nagara, Mandya district, Karnataka state.
- To know the various epidemiological factors (human and environmental factors) related to road traffic accident cases.

METHODOLOGY

Study area

Present study was conducted in a tertiary care hospital attached to Adichunchanagiri institute of medical sciences B.G.Nagara, Nagamangala Taluk, Mandya district, Karnataka state.

Study Design

Hospital based Cross sectional study.

Study period

Twelve months from July 2021 to June 2022

Study population

Road traffic accident victims attending a tertiary care hospital in B.G.Nagara, Nagamangala taluk, Mandya district during the period of one year from July 2021 to June 2022

Study subjects' description

Inclusion criteria

All Road traffic accident victims attending the tertiary care hospital, B.G.Nagara, who were willing to participate in the study, during the period of one year.

Exclusion criteria

Road traffic victims who were referred immediately to higher centre. Road traffic accident victims who were brought dead.

Sample Size

A total of 1204 cases fulfilling both inclusion and exclusion criteria seeking care in the tertiary care hospital from July 2021 to June 2022 were included in the study.



Sampling procedure

All the Road traffic accident victims attending a tertiary care hospital attached to Adichunchanagiri Institute of Medical sciences and Hospitals, in the one year period were included in the study (Period Sample).

Ethical Committee approval was taken before conducting the study: Institutional Ethical Committee approval was taken prior to the start of the study.

Consent from Study Participants: Informed oral consent was obtained from the study participants before collecting the data after giving adequate information regarding the nature and the purpose of the study in the local language.

Method of data collection

Source of data: Primary data obtained from the study victims and attendees using a pre-tested semi structured questionnaire.

Methodology: All the Road traffic accident victims who were attending the tertiary care hospital were interviewed daily from 4pm to 6pm using a predesigned and pretested semi-structured questionnaire with known human and environmental factors and information related to their socio-demographic profile. This Questionnaire was developed specifically for this study. It was pilot tested and the necessary changes were incorporated.

The Questionnaire consisted of two sections as follows;

- I. General information (personal data, family composition and socioeconomic status)
- II. Specific information regarding the accident. The information about the accident like when, where and how it happened. What are all the factors (environmental, human & social) influenced it and their mode of travel (occupant or driver/two wheeler or four wheeler). How it could have been prevented.

Statistical analysis: Data was entered in Microsoft Excel and was analyzed using SPSS version 20.0. Descriptive statistics: Results were expressed in percentages and proportions.

Analytical statistics: Association between road traffic accident and the socio-demographic variables was tested by using Chi-Square test. For the test, P-value < 0.05 was considered as significant.

RESULTS

Road traffic accident is a major public health issue which result not only in death but the disability among survivors will become burden to the society. This study was taken to find the epidemiological factors influencing the road traffic accident which is an important cause for mortality and morbidity. During the study period, a total of 1204 road traffic accident cases from 536 accidents involving 826 vehicles were interviewed using semi-structured questionnaire in the emergency department of Adichunchanagiri Institute of Medical Sciences and Hospital, B.G.Nagara, Nagamangala taluk, Mandya.

The range of age of victims was from 6 year to 84 years with a mean age of 32.6years (\pm 9 years). The collected data shows that the majority (47%) of the victims belonged to the age group of 15-30 years, followed by 31-55 years of age with 38.8%, then by >55 years of age group with 7.1% and children of 0 -14 years of age group contributing to 6% of the total victims. There is a significant difference between male and female victims as compared with the age groups ($P < 0.001$) (Table 1).

In the present study, majority (27.4%) of victims were educated up to pre-university followed by secondary level education 21.3%, then by illiterate people around 15.4%. here we can see the persons who were educated up to post graduate degree were found to be least in number followed by graduates 8.9%. In illiterate group there was an

even distribution of male and female victims with 51% and 49% respectively. However as the education level increases there were a significant difference between male and female victims as compared with their education ($P < 0.0001$). Maximum difference was found at the level of high school with 90% males and 10% females (Table 1).

About 34% of victims were engaged in semi-skilled work followed by unskilled workers around 22.8% and students around 21.4% and the least number victims who were doing skilled works. There is a significant difference between male and female victims as compared with their occupation ($P < 0.0001$). Maximum difference was found with Semiskilled workers (90% males and 10% females) followed by students (86% males and 14% females). The present study shows that the majority (38%) of victims belong to the socio economic status of class III followed by class IV around 22.2% and about 19.9% from class II and least (7.2%) from class V according to BG.Prasad's classification. There was no significant association between males and females as compare with their socio economic class. In the distribution of religion, majority of RTA victims (76.7%) were Hindus followed by Muslims (20.2%) and Christians (3.1%). There was no significant association between males and females as compared with their religion (Table 1).

Table 1: Distribution of study participants based on their socio-demographic characteristics

Socio-demographic details	Males (n=988)	Females (n=216)	Total N=1204	Percentage (%)	P Value
Age groups of study participants:					
0 to 14 years	61	13	74	6.1	P < 0.001
15 to 30 years	470	107	577	48	
31 to 55 years	400	68	467	38.8	
>55 years	57	28	85	7.1	
Education of study participants:					
Illiterate	95	90	185	15.4	P < 0.0001
Primary School	73	14	87	7.2	
Middle School	228	29	257	21.3	
High School	168	19	187	15.5	
Pre-University	293	37	330	27.4	
Graduate	89	18	107	8.9	
Post Graduate	42	9	51	4.2	
Occupation of study participants:					
Unskilled	230	109	339	28.2	P < 0.0001
Semi-skilled	370	39	409	34	
Skilled	116	32	198	16.4	
Students	222	36	258	21.4	
Socio-Economic Status of study participants:					
Upper	123	30	153	12.7	P < 0.456
Upper Middle	188	51	239	19.9	
Lower Middle	380	78	458	38	
Upper Lower Class	226	41	267	22.2	
Lower Class	71	16	87	7.2	
Religion of study participants:					
Hindus	752	172	924	76.7	P < 0.930
Muslims	212	32	244	20.2	
Christians	24	12	36	3.1	

Out of those head injury 58.3% of victims had Glasgow Coma Scale Score of ≤ 3 , followed by 37.5% of head injury victims had a score of 4-7 and 4.2% had a score of 8-15. About 9.6% of victims in this study were unconscious, 19.4% were semi conscious and 71.1% of victims were conscious. GCS between 4 and 7 was taken as semiconscious victim. The maximum number of RTA victims sustained simple injury 989(82.2%) when compared to the grievous injury 215 (17.8%). Also, out of 536 collision (may involve 2 vehicles or vehicle on stationary objects) about 284(52.9%) accidents had head on collision followed by sideways collision around 188(35.1%), from behind collision was 54(10.1%) and 10 (1.9%) were unknown type of collision (Table 2).

Table 2: Distribution of study participants according to various epidemiological factors associated with Road Traffic Accidents

Epidemiological factors	Frequency (N=1204)	Percentage (%)
Glasgow Coma Scale (GCS):		
<3	56	58.3
4-7	36	37.5
8-15	04	4.2
Condition of the study participants during admission:		
Unconscious	115	9.6
Semi-conscious	233	19.4
Conscious	856	71.1
Type of injury sustained by the study participants:		
Grievous injury	215	17.8
Simple injury	989	82.2
Type of collision sustained by the study participants:		
Head on collision	284	52.9
Collision from behind	54	10.1
Collision from sideways	188	35.1
Unknown / Do not remember	10	1.9
Type of vehicle travelled during the RTA:		
Two-wheeler	544	65.9
Three-wheeler	12	1.5
Four-wheeler	250	30.3
Heavy Motor Vehicle	20	2.3
Age of vehicle travelled during the RTA:		
0-3 years old	293	35.5
4-6 years old	390	47.3
7-10 years old	139	16.8
>10 years old	4	0.4
Mode of travel by the study participants:		
Driver	826	68.6
Pillion rider or occupant	378	31.4
Mobile usage by the study participants during the RTA:		
Yes	38	7.1
No	498	92.9
Road familiarity when met with the RTA:		
Familiar road	352	29.2
Unfamiliar road	852	70.8
Presence of rains or post rains slippery road when met with the RTA:		
Was raining and slippery	71	13.3
Not raining	465	86.7
Road visibility when met with the RTA:		
Adequately visible	159	29.7
Inadequately visible	377	70.3

In the present study, a total of 826 vehicles were involved in the Road traffic accident. Out of those 826 vehicles, 544(65.9%) were two wheelers followed by 250 (30.3%) four wheelers and 20(2.3%) heavy motor vehicles with three wheelers contribute to the least around 12(1.5%). A total of 826 vehicles were involved in the Road traffic accident. Out of those 826 vehicles, 544(65.9%) were two wheelers followed by 250 (30.3%) four wheelers and 20(2.3%) heavy motor vehicles with three wheelers contribute to the least around 12(1.5%). It was observed that 310 (47.3%) of the vehicles were 4-6 years old followed by 293(35.5%) were 0-3 years old, 139 (16.8%) were 7-10 years old and only 4 (4.5%) were more than 10 years old. The present study also shows that drivers comprised the maximum number of victims accounting for 68.6% followed by occupants 31.4%. In about 7.1% of the total accidents the human factor of talking on mobile phone was the reason for the accident that occurred and around 92.9% were not

related to the usage of mobile phone while driving. About 70.80% were unfamiliar with the road and 29.2% were familiar with the road at the time of accident and about 13.3% of total accidents occurred during rain which leads to poor visibility and slippery road surface and about 86.7% were not related to raining. The inadequate visibility of road due to environmental factors like rain, fog, smog and mist contributes to 159 (29.7%) of total accidents (Table 2).

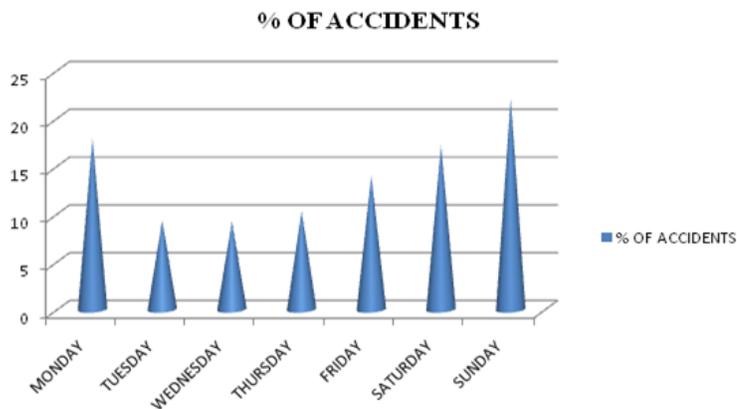
In the present study maximum number of accidents took place in tarred road (61%) followed by Kutcha road (20%) and slippery road around 16.8%. In the present study the maximum number 474 (88.5%) accidents were not related to presence of speed breaker and the rest 62 (11.5%) of road traffic accidents were related to presence of speed breaker.

About 18.5% of total accidents were due to the influence of alcohol while driving and remaining 81.5% were not due to the alcohol influence. There no significant association found between alcohol and age group ($P < 0.234$). (Table 3) In our present study the majority (40%) of accidents occurred during weekends with the maximum 22.1% on Sundays followed by around 17% on Mondays and Saturdays. The least number of accidents found to occur on Wednesdays (9.2%), Tuesdays (9.3%) and Thursdays (10.3%) (Figure 1)

Table 3: Distribution of study participants based on the influence of alcohol during the accident:

Alcohol influence	0-14years	15-30years	31-55years	>55yrs	Total	Percent	P value
Present	19	86	107	11	223	18.5	<0.234
Absent	55	381	471	74	981	81.5	
Total	74	577	467	85	1204	100.0	

Figure 1: Distribution of study participants according to the day of occurrence of the Road Traffic Accidents:



The maximum number (23.8%) of Road traffic accidents occurred between 6pm to 9pm followed by 3pm to 6pm (20.9%). Majority 44.7% of accidents took place during day time between 3pm to 9 pm. that maximum number occurred during June (19.1%) and July month (18.9%) followed by November month (12%).the remaining months had an average of 3% to 7%.

DISCUSSION

Age and Gender

The majority (47%) of the victims belonged to the age group of 15-30 years, followed by 31-55 years of age with 40.5%, then by >55 years of age group with 7.1% and children of 0 -14 years of age group contributing to 6% of the total victims. The range of age of victims was from 6 year to 84 years with a mean age of 32.6years (+ 6years). There was a significant difference between male and female victims as compared with age group ($P < 0.001$). The most

commonly involved victims were in the age group of 15 to 30 years, they constitute the most productive and active population which leads to major economic loss to the community.

The studies conducted by Agarwal et al [9], Bener A et al [10], Gururaj G et al [3], Jirojwong S et al [11], Rakhi Dandona et al [12], Ghimamire et al [13], and WHO Injury Chart book [4] observed the same findings as the results of this study. Minimum number of victims was in the extreme age group and least in older persons. This may be attributed to their road using factor, the most active and productive age group people are using the road transport than other age groups.

The younger age group is often less experienced and tends to be over confident with over speed. These risk behavior for joyful ride without safety precautions are the main reasons for their vulnerability [14]. The result shows there is a male preponderance in the gender distribution contributing around 82% victims and females were around 18% with a ratio of 4.6:1. Choudhary et al [15] observed that 83.2% were males and 16.8% were females with a ratio of 4.9:1 which is similar to this study results. Ganveer G B et al [16] in their study they observed that the male to female ratio was 6:1 and is similar to the value obtained. This male predominance is due to the fact that in our society males are more productive and earn livelihood of the family and they tend to travel more as compared to the females. Therefore the involvement of males in driving and travelling frequently than females may contribute to these predominant male victims.

Soori H et al [17], Jeepara P et al [18] and Suryanarayana SP et al [19] also observed the similar findings in their study results. The paternalistic nature of our society is the reason for male predominance. In Nagamangala the maximum outdoor activities are performed by males while females tend carry out domestic household works.

Education

In the present study, majority (27.4%) of victims were educated up to pre-university followed by secondary level education 21.3%, then by illiterate people around 15.4%. here we can see the persons who were educated up to post graduate degree were found to be least in number followed by graduates 8.9%. JIPMER Hospital study [20] observed that 19.3% victims were educated up to secondary level of education while illiterate were around 16.6% and victims with higher level of education were the least in number. Bener A et al,[10] observed that maximum number 26.6% were done up to secondary level of education with least number of victims in the post graduates and graduates. Agarwal et al [9], and Mishra et al [22] were found that around 65% of victims were educated up to secondary level. The reason for the maximum number of victims in the pre-university and with secondary level of education could be due to frequent road usage for educational purposes with lesser experience of driving.

Occupation

In the present study about 34% of victims were engaged in semi-skilled work followed by unskilled workers around 22.8% and students around 21.4% and the least number victims who were doing skilled works. The study conducted by Agarwal et al [9] and Jeepara [18] studies were also showing similar results. Another study conducted in Delhi [21] observed that students were commonly involved in accidents followed by unskilled labourers.

The maximum numbers of victims were in the semi-skilled and unskilled occupation groups. Mandya district being the sugar city majority of manual labourers engage in driving trucks and vehicles for transport of sugarcane and also observed that overloading is common in this area. This could be the reason for unskilled labourers as the maximum number of victims.

Socio economic class and religion

The present study shows that the majority (38%) of victims belong to the socio-economic status of class III followed by class IV around 22.2% and about 19.9% from class II and least (7.2%) from class V according to B.G. Prasad's classification. Hamma CL [22] study shows that victims from families in a lower socio-economic group were more involved in Road traffic accident in the range of 1.75 to 3.25. Similar results were found in the other studies



conducted by JIPMER Hospital [20]. The majority of victims around 50% were belong to lower socio-economic status. This could be due to that the driving work has been chosen by the lower socio-economic status people.

In the distribution of Religion, majority of RTA victims around 76.7% were Hindus followed by Muslims (20.2%) and Christians (3.1%). Agarwal et al [9] study observed that around 67% of victims belonged to Hindu religion. In Mandya district predominant religion is Hindus followed by Muslims and least by Christians. This could be the reason for the predominant victims of Hindu religion.

Other factors associated with RTA

About 9.6% of victims in this study were unconscious, 19.4% were semi conscious and 71.1% of victims were conscious. Agarwal et al [9] Patil SS [23] and Deepak Sharma et al [24] observed the similar findings in their study results. The major cause of unconsciousness in the RTA victims was found to be sustaining head injury and those who have not used safety measures at the time of accident.

In our present study the maximum number (23.8%) of Road traffic accidents occurred between 6pm to 9pm followed by 3pm to 6pm (20.9%). Majority of accidents took place during day time between 6 am to 6 pm. Ranganathan et al [25] conducted a study which showed that more than 60% of accidents took place in day time (6am to 6pm). This could be due to the more active and mobile people during the day time. In our present study the majority (40%) of accidents occurred during weekends with the maximum 22.1% on Sundays followed by around 17% on Mondays and Saturdays. The least number of accidents found to occur on Wednesdays (9.2%), Tuesdays (9.3%) and Thursdays (10.3%). Jirojwong S et al [11] study observed that more than 1/3rd of injuries were sustained during weekends. The maximum number of accidents on weekends and on Mondays is expected as the Bangalore – Mangalore highway holds the major traffic on weekends with people who are employed and studying in Bangalore from other places used to travel on weekends. This could be the reason for the maximum number of accidents reported on weekends.

In the present study the inadequate visibility of road due to environmental factors like rain, fog, smog and mist contributes to 29.7% of total accidents. NIMHANS conducted a study which showed that the Poor visibility was one among major five factors contributing to road traffic accidents [26]. Rainy environment, foggy conditions or misty conditions tend to decrease the visibility which demands extra precaution to avoid accidents. During night times the opposite vehicles head light create glare which also decreases the visibility eventually leads to road traffic accidents.

The present study shows that 7.1% of total accidents the human factor of talking on mobile phone was the reason for the accident that occurred and around 92.9% were not related to the usage of mobile phone while driving. Benner A [10] study observed that 42.3% of the victims had a habit of using mobile phone while driving. Agarwal et al [9] and Mishra et al [18] also showed the similar findings in their study. In our present study it was observed that, about 13.3% of total accidents were due to the raining which leads to poor visibility and slippery road surface and about 86.7% were not related to the presence of raining. Mishra et al [18] study showed that the 81.6% of total road traffic accidents occurred during rainy and cloudy conditions. The reason for the increased frequency of road traffic accidents in the month of June and July were due the raining environmental factor as compared to the summer season.

In the present study about 18.5% of total accidents were due to the influence of alcohol while driving and remaining 81.5% were not due to the alcohol influence. A study conducted by Sreedharan J [27] had observed that 20% of the drivers had consumed alcohol. A study conducted in Nepal by Mishra et al [18], about 16.9% of drivers were found to consume alcohol 2 to 3 hours prior to accident.

CONCLUSION

Road traffic accidents lead to death more than a million of people every year and incapacitate many millions more. The elderly, children and the disabled are particularly vulnerable. Despite the growing burden of road traffic injuries, road safety has received insufficient attention at both the national and international levels. This may be due to lack of general awareness and specific information on the magnitude of the problem on mortality, morbidity and economic loss due to road traffic crashes and on the interventions to prevent road traffic accidents or decrease the harm due to RTA.



In our present study, Majority RTA victims belong to the age group of 15 to 30 years of age with low educational status and doing semiskilled work. Predominant RTA's occurred between 3pm to 9 pm with a peak during weekends. Majorities were two wheelers and drivers were predominantly injured with good numbers under the effect of alcohol. Inadequate visibility of road and raining with slippery road surface contributed to significant number of RTA's. To conclude males of younger age group, alcohol intoxication, lack of safety measures, low educational status with semiskilled occupation driving more than 4 hours during peak hours are the main reasons for Road traffic accidents.

Recommendations

WHO and World Bank data showed that, without appropriate preventive measures, these injuries will rise drastically by the year 2020. It is not only 90% of the current burden borne by low-income and middle-income countries, but also there will be increase in the casualty rates in these countries. Prevention of road traffic accident is a shared responsibility, which requires strong commitment by government, Non-Governmental organizations and by people. The governments at both national and state level can allot budgets for road safety, can establish emergency care system, legislation demanding the safety measures like seat belt and helmets wearing and alternate mass rapid transit system and railways. At individual level, people can act responsibly by following the traffic rules, abiding speed limits on roads, making habit of using safety measures like seat belts and helmets and strictly avoiding alcohol and mobile phones while driving. As an individual they should be aware that Road traffic injuries are not accidental and they can be prevented.

Limitations

The results are not representative of the general population burden of Road Traffic Injury, as it is a Hospital based cross sectional study. As the study is based on the data collected from victims, the information may not be close to the actual facts and figures about the Road Traffic Injury. Lastly, as the severe head injury and spinal injury cases were referred to higher centers, the data regarding head injury may be under estimated.

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