



## An Epidemiological Study of Road Traffic Injuries Reporting in Casualty Department of Guru Nanak Dev Hospital, Amritsar

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### Abstract

**Background:** Road Traffic Accident are 4<sup>th</sup> leading cause of mortality and disease burden worldwide in 15-59 years age groups. RTA rate of 35 per 1,000 vehicles in India is one of the highest in the world and so is the RTA fatality rate of 25.3 per 10,000 vehicles<sup>1</sup>. Accidents occur not only due to ignorance but also due to carelessness, thoughtlessness and over confidence. Human, vehicular and environmental factors play role before, during and after a Road Traffic Accidents (RTA). Road traffic injuries are partially predictable and hence preventable.

**Aim:** To study the epidemiology of road traffic accidents along with various risk factors responsible for these accidents.

**Material and Methods:** Hospital based study was conducted for the period of one year from 1<sup>st</sup> Jan 2012-31<sup>st</sup> Dec 2012. It was a descriptive type of study. The investigator visited all the victims of road side accidents admitted in the casualty. They were interviewed in their vernacular language. They were explained about the purpose of the study. The informed consent was taken.

**Result:** Most of the accidents occur in age group of 25-44 years (52.07%) followed by 15-24 years (25.64%). Most of the victims were having driving license (76.93%). Nearly 48% made their licences through agent and 52% through authority. Only 5.82% were admitting use of intoxicant at the time of accident. 9.74% victims admitted use of mobile phone during driving, 19.83% two wheeler user never used helmet while 36.03% used it occasionally. 15.28% four wheeler drivers never used seatbelt. 21.39% never used dipper while 49.8% used it sometimes. 96.08% victims had no knowledge of speed limit.

**Conclusion:** It is concluded that traffic training and comprehensive safety education must be made an essential part of school curriculum. Driving license should be issued in a more disciplined manner. Along with all these, emergency health services should also be strengthened with the opening of more trauma centers so that we can save the lives of affected peoples by providing proper emergencies services on time.

**Keywords:** Road traffic accidents(RTA), Traffic training, Driving license.

### Introduction

Road traffic accidents (RTAs) and related injuries alone is the 10<sup>th</sup> leading cause of death worldwide,

will become the 3<sup>rd</sup> leading cause of disability adjusted life years lost worldwide by 2020<sup>2</sup>. About 90% of the global RTAs related deaths occur in

middle and low income countries. Road traffic injuries are among the three leading causes of death for people between 5 and 44 years of age and most common cause of death for people between 5 to 25 years of age<sup>3</sup>. The south-Asia region is densely populated with nearly 25% of the world's population in around 5% global land area. According to the world health report 2002, of the global burden of injuries, 30.3% morbidity and 28.7% mortality occurred in the South-East Asia region. By 2020, the road traffic death in india will increase by 147%<sup>4</sup>. Punjab Statistical Report 2012 observed that number of accidents were increased from (1980) 1010 to (2011) 6513. The number of injured and killed person also increased from 836 (1980) to 4081 (2011); 472(1980) to 4931(2011) respectively<sup>5</sup>. With 311 deaths every month on an average in road mishaps in Punjab in 2010, there were 6,641 road accidents in Punjab<sup>6</sup>. The severity of accident- death per 100 mishap- in the state has been increasing day by day. Ludhiana and Amritsar are the worst examples. But the states as a whole is also losing over 4,800 lives in roads accidents<sup>7</sup>. RTIs are also linked to issues of poverty and equity. A study from Bangalore revealed that mortality from RTIs was 13.1 and 48.1 per 100,000 in the poorer socioeconomic strata of urban and rural population, while it was 7.8 and 26.1 per 100,000 population in the non-poor categories<sup>8-9</sup>. An estimate carried out in 2000 suggest that the economic cost of road traffic crashes globally was approximately US\$ 518 billion<sup>10</sup>. In India

economic loss is 3% of India GDP for the year 2000<sup>11</sup>.

### Material and Method

The proposed study was carried out in emergency department of Guru Nanak Dev Hospital, Govt. Medical College, Amritsar. It was a descriptive type of study. The study population was the roadside victims reporting in the Guru Nanak dev Hospital, Amritsar. Study was conducted for the period of one year from 1<sup>st</sup> Jan 2012-31<sup>st</sup> Dec 2012. The investigator visited all the victims of road side accidents admitted in the causality department of Guru Nanak Dev Hospital Amritsar.

The victims/care givers were explained about the purpose of the study and were assured that anonymity and confidentiality will be maintained and the information thus obtained will not be used for any other purpose, except for the study. Victims were interviewed in their vernacular language .The informed consent was taken.

**Inclusion Criteria:** RTA victims who were admitted in Guru Nanak Dev Hospital Amritsar in Causality Department attached to Govt. Medical College Amritsar.

### Exclusion Criteria

1. Victims that are referred to another institutes.
2. Victims who died before the investigator reached.
3. Non-cooperative patients.

Scale to be used in study- Kuppuswamy's Scale  
Criteria for socioeconomic status

Sr. No	EDUCATION	SCORE	OCCUPATION	SCORE	FAMILY INCOME	SCORE
1	Post graduate	7	Profession	10	>29938	12
2	Graduate	6	Semi- profession	6	14962-29938	10
3	Intermediate	5	Clerical/Farmer/Shop	5	11217-14962	6
4	High school	4	Skilled worker	4	7472-11217	4
5	Middle	3	Semi skilled	3	4478-7472	3
6	Primary	2	Unskilled	2	1499-4478	2
7	Illiterate	1	Unemployed	1	<1499	1

According to Kuppuswamy’s index taking into consideration families are classified in to various socio economic groups.

Sr. No	SOCIOECONOMIC CLASS	SCORE
1	Upper(I)	26-29
2	Upper Middle(II)	16-25
3	Lower Middle(III)	11-15
4	Upper Lower(IV)	5-10
5	Lower(V)	<5

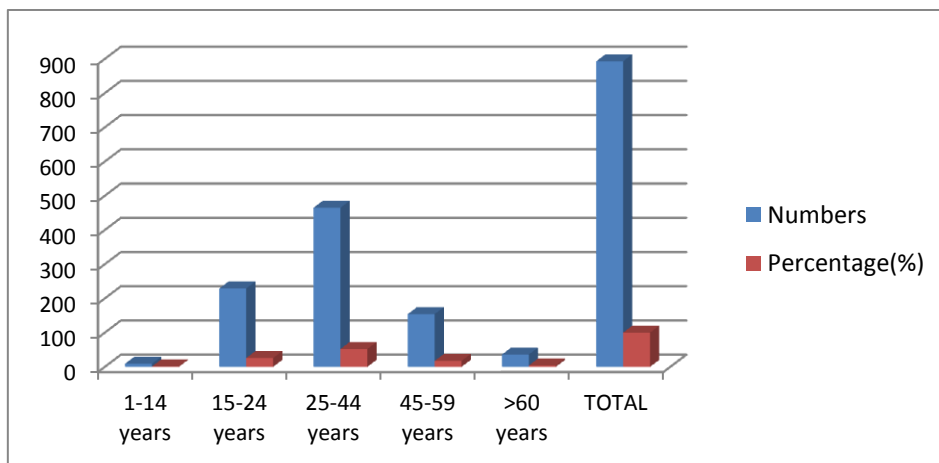
**Result**

Most of the accidents occur in age group of 25-44 years (52.07%) followed by 15-24 years (25.64%).): Most of the victims were having driving license (76.93%). Nearly 48% made their licences through agent and 52% through authority. Only 5.82% were admitting use of intoxicant at the time of accident. 9.74% victims admitted use

of mobile phone during driving. 53.19% admitted occasional use of mobile phone during driving. 21.39% never used dipper while 49.8% used it sometimes.19.83% two wheeler user never used helmet while 36.03% used it occasionally. 15.28% four wheeler drivers never used seatbelt.

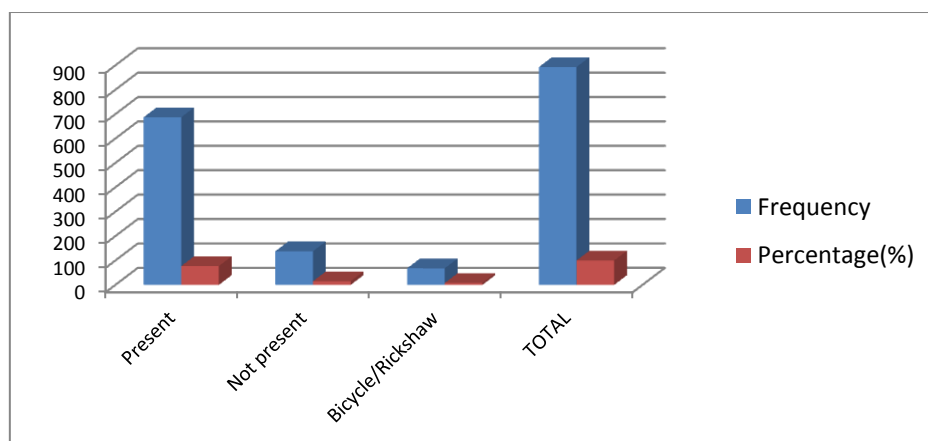
Distribution of Road Traffic Accident Drivers According to Age (n=893)

Age	Numbers	Percentage(%)
1-14 years	9	1.01
15-24 years	229	25.64
25-44 years	465	52.07
45-59 years	154	17.25
>60 years	36	4.03
TOTAL	893	100



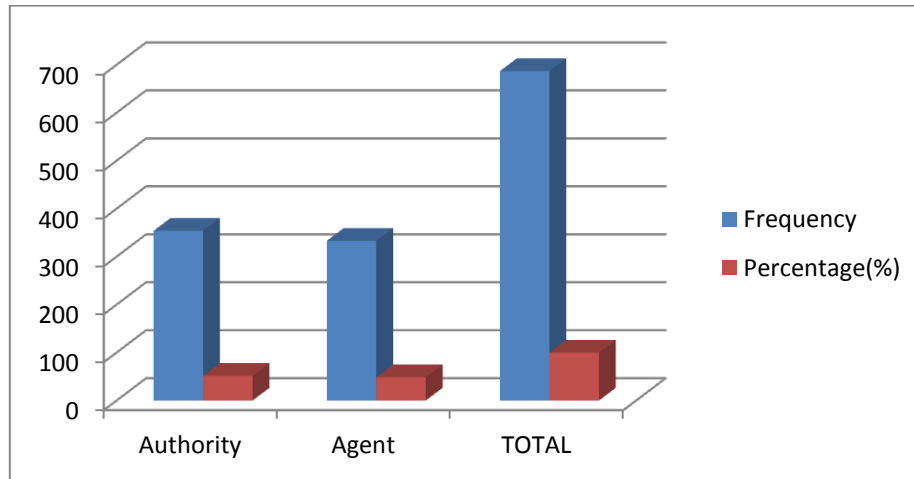
Distribution of Road Traffic Accident Victims according to their Driving License (n=893)

Driving licence	Frequency	Percentage(%)
Present	687	77
Not present	138	15
Bicycle/Rickshaw	68	8
TOTAL	893	100



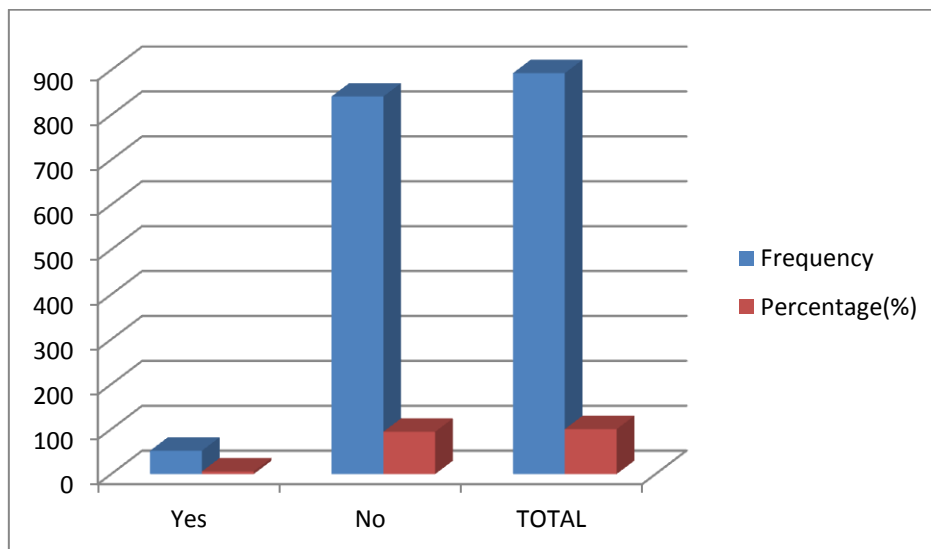
Distribution of Road Traffic Accident Victims according to their mode of Issuance of Driving Licence (n=687)

Driving licence	Frequency	Percentage(%)
Authority	354	51.53
Agent	333	48.47
TOTAL	687	100



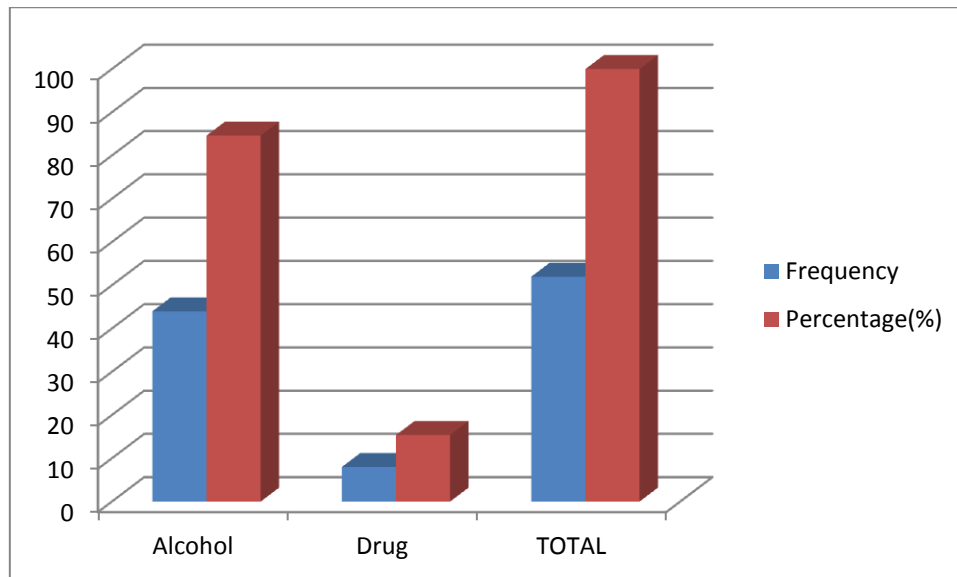
Distribution of Road Traffic Accident Victims According to Intoxication During Driving (n=893)

Intoxication	Frequency	Percentage(%)
Yes	52	5.82
No	841	94.18
TOTAL	893	100



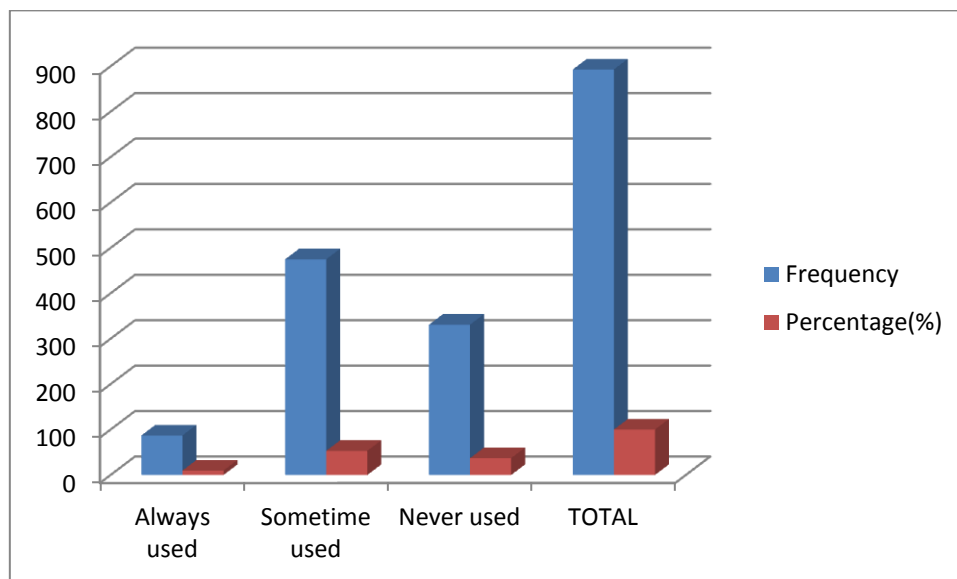
Distribution of Road Traffic Accident Victims According to their Substance used for Intoxication (n=52)

Intoxicating Substance	Frequency	Percentage(%)
Alcohol	44	84.62
Drug	8	15.38
TOTAL	52	100



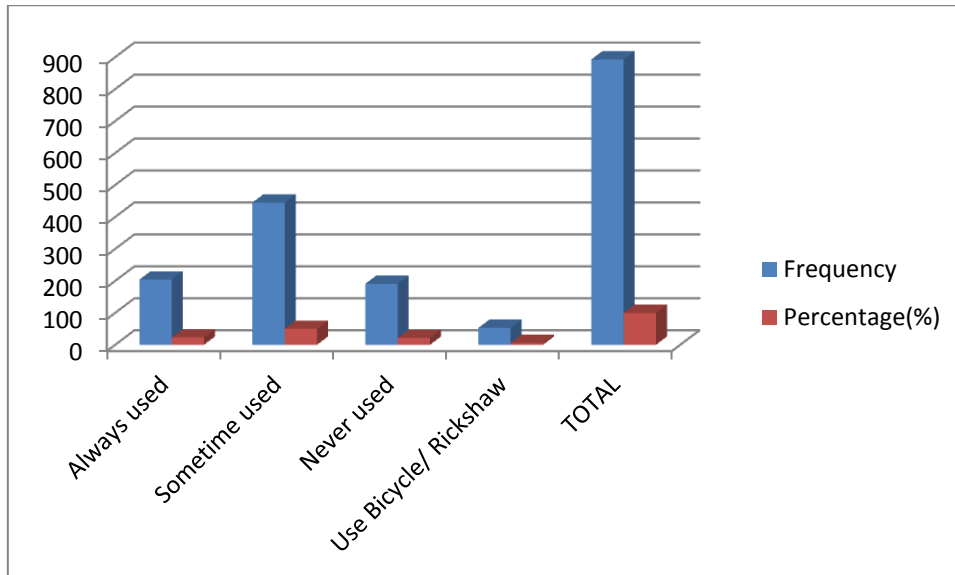
Distribution of Road Traffic Accident Victims According to their Mobile Phone used by victim (n=893)

Use of Mobile phone during driving	Frequency	Percentage(%)
Always used	87	9.74
Sometime used	475	53.19
Never used	331	37.07
TOTAL	893	100



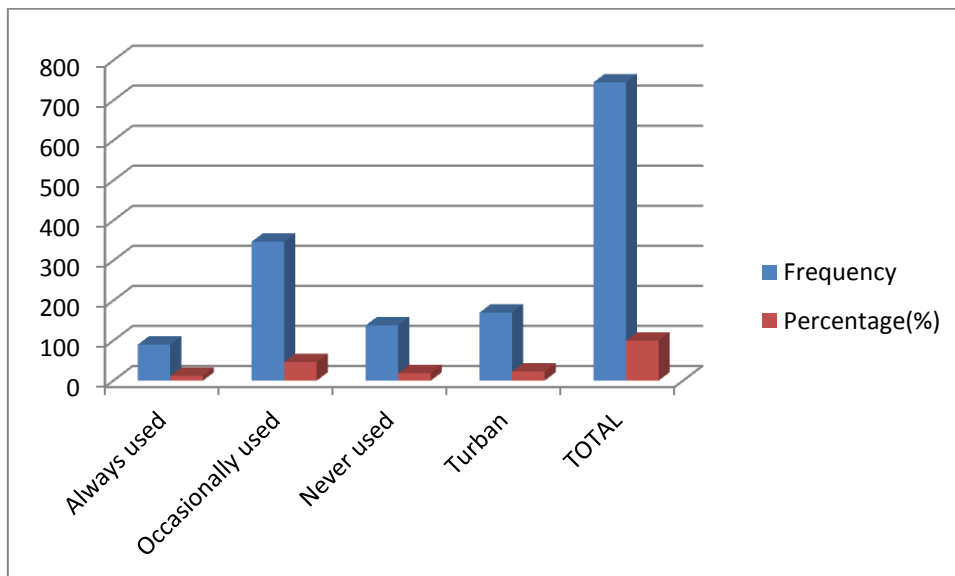
Distribution of Road Traffic Accident Victims According to Usage of Dipper During Driving (n=893)

Use of Dipper	Frequency	Percentage(%)
Always used	204	22.84
Sometime used	445	49.83
Never used	191	21.39
Use Bicycle/ Rickshaw	53	5.94
TOTAL	893	100



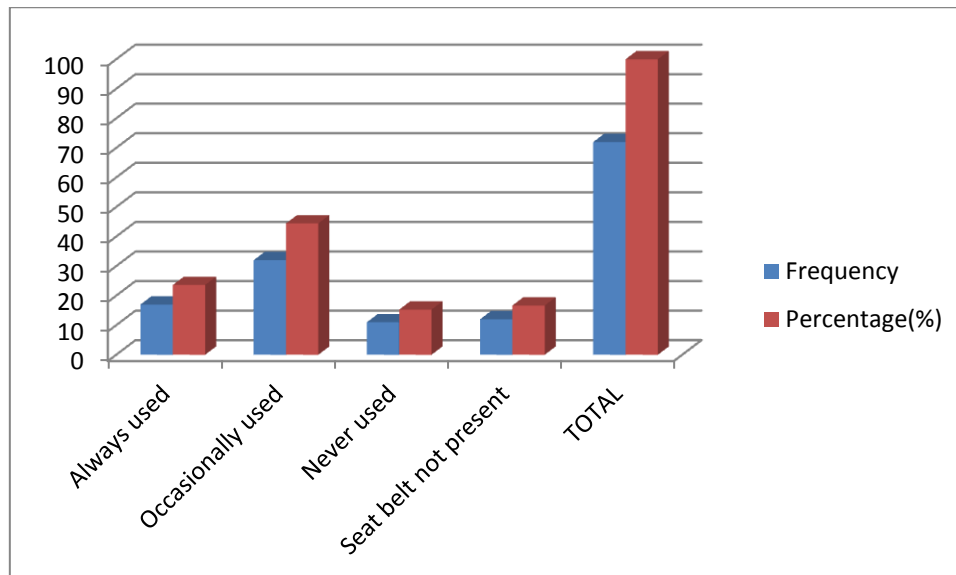
Distribution of two Wheeler Road Traffic Accident Victims According to Their Helmet Used During Driving (n=745)

Use of Helmet	Frequency	Percentage(%)
Always used	90	12.08
Occasionally used	347	46.58
Never used	138	18.52
Turban	170	22.82
TOTAL	745	100



Distribution of Road Traffic Accident Victims According to their habit to use Seat Belt during Driving (n=72)

Use of Seat Belt	Frequency	Percentage (%)
Always used	17	23.61
Occasionally used	32	44.44
Never used	11	15.28
Seat belt not present	12	16.67
TOTAL	72	100



### Discussion

The present study was conducted in Guru Nanak Dev Hospital, Govt. Medical College, Amritsar, involving 1425 patients who were admitted in emergency department from 1<sup>st</sup> Jan 2012-31<sup>st</sup> Dec 2012 due to injuries in road traffic accidents. Majority of patients (66.60%) reported from district Amritsar, followed by district Gurdaspur( 15.30%) and Tarntaran (14.81%). 3.30% patients reported from other cities of Punjab or other states. Majority of the cases were in age group of 15-44yeras. In all the age groups, males were predominant victims with male to female ratio of 5.72:1.Our this finding is in line with the WHO findings<sup>12</sup>. Gharpure et al(1959)<sup>13</sup> also corroborated our study. Major proportion of accidents occurred during morning busy hours (4am-12noon) of the day when peoples are rushing for their jobs or to school and collages. Also, accidents were more in the evening hours (4pm-8pm), when people returned back in the evening. Out of 893 drivers, 841(94.18%) shows no intoxication during, 44(4.92%) had consumes alcohol and 8(0.90%) had taking other types of drugs. So it shows alcohol is a risk factor for road traffic accidents as it impairs judgment and increases the possibility of involvement in other risk behaviours (eg. Speeding, violating traffic rules etc.)<sup>14,15</sup>. Few studies undertaken in india also revealed the growing association of alcohol

and road traffic injuries<sup>16,17,18,19</sup>. Our study also showed that out of 72 who drives vehicle, 43 either occasionally or never used seat belts. Out of 745 two wheelers drivers, 485either occasionally or never used helmets.These results are in concordance with some of studies already taken by other persons or institutes<sup>20,21,22</sup>.

### Conclusion

So, keeping in mind of these factors responsible for causing road traffic injuries/deaths, we recommended that traffic training and comprehensive safety education must be made an essential part of school curriculum. Traffic rules awareness programs must be carried out regularly. Also emergency health services should be strengthened with the opening of trauma centres at tertiary level hospital to provide round the clock emergency health services.

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