**INTRODUCTION**

Road Traffic Accidents (RTA) have been representing a major epidemic for current societies and has entered in the public health agenda with the morbidity and mortality by external causes and a disproportionately large number of these occurs in developing countries. It is ranked 9th globally among the leading cause of Disability Adjusted Life Year (DALY) lost and is projected to rise to the 3rd place by 2020.

Most of the accident occurs in adults below the age group of 50 years and the greatest numbers of cases are males in the age group of 21-30 years. Annually more than one million deaths are recorded world-wide while non fatal road traffic accidents are a major problem causing hospitalizing and permanent disability to thousands of person each year.

World Health Organization (WHO) in 2013 reported that fatal accidents cause more than 1.24 million fatalities globally. WHO also predicted that if they continued at the current pace, road traffic accidents will become the fifth leading causes of death by the year 2030. India is undergoing a major economic and demographic transition coupled with increasing urbanization and motorization. Over 1.2 million people are seriously injured; 3, 00,000 disabled permanently and 80,000 die in Road Traffic Accidents (RTA) annually in India. Road Traffic Accidents (RTA) will victimize not only the driver alone but also create emotional and economic burden on the family of the injured. Road traffic Accidents (RTA) is becoming a significant public health problem. Even though India has about 1% of the world vehicles population, 6% of the world road accidents occur here.

As reported in many studies, head and neck injuries are most common of all injuries (lower limb injuries, upper body injuries etc).

**Aim:** To compare the prevalence of Road Traffic Accidents (RTA) and its mortality following Pre and Post ban on alcohol by Bihar state Government.

**Materials and Methods:**

A Hospital based approach was used. A total of 232 all available hospital records of patients who were admitted and treated for road traffic accidents over a period of 3 years were recorded belonging to two major hospitals in Patna City. The data was collected using a close ended questionnaire which consisted of information on demographic details, type of injuries, history of alcohol use, pattern of injuries, causes of injuries, mortality and various other useful information pertaining to the objectives of the study. Ethical clearance was obtained from Ethics committee of Buddha Institute of Dental Sciences and Hospital, Patna.

**Results:** An overall 97.1% of the subjects consumed alcohol in all the records of pre alcohol ban period and only 2.9% of the subjects consumed alcohol among post alcohol ban period. Among them, lower body injuries were commonly seen with 42.2% of the subjects. Among head and neck injuries mandible injuries were common with 32.3%, followed by 22.6% similarly seen in pre and post alcohol ban. Sociodemographic reasons such as poor roads, inadequate enforcement of road safety regulations and speed limits, reluctance to use helmets, could be the possible explanations in particular in this part of the country. So efforts should be directed in this direction by the concerned authority to minimise the damage and thus reduce the morbidity or mortality.

**Conclusion:** The present study aimed at assessing the prevalence of Road Traffic Accidents in two major hospitals in Patna city prior to alcohol ban and post alcohol ban revealed that the prevalence of Road Traffic Accidents is relatively high. The role of alcohol is a major causative factor prior to alcohol ban was considered to be one of the major cause of Road Traffic Accidents and post alcohol ban. Socioeconomic reasons such as poor roads, inadequate enforcement of road safety regulations and speed limits, reluctance to use helmets, could be the possible explanations in particular in this part of the country. So efforts should be directed in this direction by the concerned authority to minimise the damage and thus reduce the morbidity or mortality.
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As reported in many studies, head and neck injuries are most common of all injuries (lower limb injuries, upper body injuries etc). In this state of Bihar, India; the use of alcohol is very prevalent and the ease of availability of cheap liquor is extensively seen in this part of the region. The most common observation made in all these Road Traffic Accidents, alcohol abused stands out distinct. The state government under the leadership of Shree Nitish Kumar, honorable chief minister of Bihar state, banned the use of alcohol in any form including possession and sale of the same a legally punishable offence. This ban was gazetted on 1st April 2016 effectively. So this study aims to observe the prevalence of road traffic accidents admitted to the hospitals in Patna city and also it aimed to find any difference between pre alcohol ban and post alcohol ban in relation to road traffic accidents.

_Aim and Objectives of the Study_

To compare the Prevalence of Road Traffic Accidents (RTA) and its mortality following Pre and Post ban on alcohol by Bihar state Government and to find the association if any between pre alcohol ban and post alcohol ban in relation to road traffic accidents.

_Methodology_

A Hospital based approach was used. A total of 232 all available hospital records of patients who were admitted and treated for road traffic accidents over a period of 3 years were recorded belonging to two major hospitals in Patna City. The hospitals included in the study were Patna Medical College and Hospital and Nalanda Medical College and Hospital. Prior to scheduling the survey, official permission was obtained from Heads of Patna Medical College and Hospital and Nalanda Medical College and Hospital, Patna. A pilot survey was undertaken to test the feasibility of the study including the assessment of clarity, validity, and applicability of the questionnaire. A survey was systematically schedule and it was conducted in the month of October 2017. On an average, 30-40 hospital - records per day of the patients who were admitted and treated for road traffic accidents were thoroughly checked and required data was collected during the survey period using the close- ended questionnaire which consisted of information on demographic details, type of injuries, history of alcohol use, pattern of injuries, causes of injuries, mortality and various other useful information pertaining to the objectives of the study. Ethical clearance was obtained from Ethics committee of Buddha Institute of Dental Sciences and Hospital, Patna. Chi-square test was used for estimation of statistical significance.

**RESULTS**

Of the total 232 subjects records examined, 82.8% were males and the rest 17.2% were females. 57.8 % belonged to Patna Medical College and Hospital and 42.2 % belonged to Nalanda Medical College and Hospital. Of the total subjects records examined, 65.1 % of the subjects belonged to pre alcohol ban and 34. 9 % belonged to post alcohol ban. And among pre alcohol ban, 36.1 % belonged to Patna medical college and Hospital and 28 % belonged Nalanda medical college and hospital. Among post alcohol ban, 20.7 % belonged to Patna medical college and Hospital and 14.2 % belonged Nalanda medical college and hospital as shown in Graph 1.

![Graph 1](image)

**Table 1** shows the distribution of the subjects according to Pre and Post alcohol ban

<table>
<thead>
<tr>
<th>Hospitals</th>
<th>Sex</th>
<th>Total</th>
<th>Alcohol consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Patna Medical</td>
<td>Males</td>
<td>108</td>
<td>46.6%</td>
</tr>
<tr>
<td>Hospital</td>
<td>Females</td>
<td>26</td>
<td>(11.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>134 (57.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nalanda Medical</td>
<td>Males</td>
<td>84</td>
<td>(36.2%)</td>
</tr>
<tr>
<td>Hospital</td>
<td>Females</td>
<td>14</td>
<td>(6%)</td>
</tr>
<tr>
<td>Total</td>
<td>98 (42.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>232 (100%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chi Square- 14.233, df 6, p=0.0369

44.4% of the subjects consumed alcohol at the time of accidents and the remaining 55.6% had no history of alcohol consumption at the time of accidents. Among subjects belonging to Patna Medical College and Hospital, 26.3% consumed alcohol while 18.1% consumed alcohol among the subjects belonging to Nalanda Medical College and Hospital. Among males 24.6% consumed alcohol, belonging to Patna Medical College and Hospital and 17.2% belong to Nalanda Medical College and Hospital. Among females 1.7% belonged to Patna Medical College and Hospital while 0.9% belong to Nalanda Medical College and Hospital. (p value < 0.05) as shown in table 1. Among head and neck injuries mandible injuries were common with 32.3%, followed by 22.6% similarly seen with involvement with skull and combination injuries 12.9% and 9.7% were seen with dento alveolar injuries and maxillary injuries. Among pre alcohol ban period (71 %), mandible injuries were commonly seen with 19.4% followed by 16.1% which were similarly seen with involvement of skull and combination injuries. (p value < 0.05) as shown in table 2.
Among pattern of maxillary fractures 42.9% had Lefort 1 fractures followed by 21.4% which were similarly seen with zygomatic arch fractures and dento alveolar injuries. Among pre alcohol ban period (64.3%), lefort1 was commonly involved in 28.6% of the cases, followed by 14.3% which were similarly seen among zygomatic arch fractures and dento alveolar injuries. Among post alcohol ban period (35.7%), 14.3% had lefort1 fractures followed by 7.1% which had similar fractures among zygomatic arch, nasal and dento alveolar injuries as shown in graph 2. (p value < 0.05) graph 3 shows the distribution of the subjects according to the type of vehicles involved in road traffic accidents in relation to Pre and Post Alcohol Ban. Motorcycle was most commonly involved in 71.2% of all road traffic accidents followed by 14.6% with three wheelers. Among pre alcohol ban period (66.5%), motorcycle was commonly involved among 42.3% of the subject, followed by three wheelers with 10.4%. Among post alcohol ban period (33.5%), motorcycle was most commonly associated with 25.9%.

**Graph 2** shows the distribution of the subjects according to the pattern of maxillary fractures (Middle third Fractures - Maxilla/Dento-alveolar injuries/combinations) in relation to Pre and Post Alcohol Ban.

**Graph 3** shows the distribution of the subjects according to the type of vehicles involved in road traffic accidents in relation to Pre and Post Alcohol Ban.

Of the total 232 subjects 17.6% loss their life due to road traffic accidents. Among pre alcohol ban period 11.2% died and among post alcohol ban period 6.4% died as a result of road traffic accidents (p value < 0.05) as shown in table 3.

**Table 3** shows the distribution of the subjects according to the Mortality with road traffic accidents in relation to Pre and Post Alcohol Ban.
alcohol ban and post alcohol ban revealed that the prevalence of Road Traffic Accidents is relatively high. The role of alcohol is a major causative factor prior to alcohol ban was considered to be one of the major cause of Road Traffic Accidents and post alcohol ban, the absence of availability of alcohol opened other new recreational reasons which included the use of drugs as the major replacements for alcohol abuse, thus this study concludes that alcohol has a major influence in the high prevalence of Road Traffic Accidents in patients admitted for treatment in Hospitals of Patna city. Also in the light of the present study, we speculate that socioeconomic reasons such as poor roads, inadequate enforcement of road safety regulations and speed limits, reluctance to use helmets, decreasing tolerance and increasing personal competitiveness among young man, could be the possible explanations in particular in this part of the country. So efforts should be directed in this direction by the concerned authority to minimise the damage and thus reduce the morbidity or mortality. Hence it is strongly recommended that improving the condition of the roads and driving skills, raising the traffic sense of the general public through campaigns, strict legislations about the use of helmets by motorcyclists and seat belts by front seat occupants and restrictions of use of mobile phones while driving may help to reduce the number of injuries.

References


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