Death due to Road Traffic Accidents Reported at Janakpur Zonal Hospital, Nepal

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Abstract

Background and objectives: Road Traffic Accidents (RTA) and its fatalities continue to be a menace in developing countries like Nepal. It has put burden upon the individuals, families and communities, cost of hospital care, physical inability to perform daily chores as consequences of disability and loss of a family member. The timing of admission of cases to hospital is crucial in saving the life of the victim. Therefore, this study was conducted at Janakpur Zonal Hospital, Janakpurdham, Nepal to access the deaths occurred due to RTA.

Materials and methods: A total of 217 unnatural deaths, only RTA death cases registered in Janakpur Zonal Hospital, Nepal were included in this study. Data collection was done from 28th May to 25th December, 2016. The collected data was analyzed with the help of Microsoft Excel and SPSS 20.0 version.

Results: Out of 217 unnatural deaths, 26% of death cases were reported as RTA. Male (78.66%) were more prone to RTA than female (21.33%). Most of the RTA death cases were observed in between 20-40 years with 42.66%. The increased RTA deaths were found in Dhanusha district. The association between death due to RTA in relation with age and gender was statistically significant (p=0.0001).

Conclusion: Inadvertent drivers, especially young adults were more vulnerable groups suffered from RTA. Strict implementation of traffic rules and regulations should be implemented. Helmets & seatbelts should be advocated & strictly followed.

Keywords: Mortality; Road traffic accident; Unnatural death

Introduction

Road Traffic Injuries are the major cause of death and disability among the young population worldwide. RTA involves collision of vehicle with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree or utility pole. These results in fatalities and injuries which have cost implication to both the victims and the economy involved. RTA entails drivers, passengers, pedestrians, properties and objects [1].

Transportation is an essential part of daily life in both developed and developing countries as it provides movement of people, goods and services from one place to another. Nepalese roads are one of the most dangerous in the world and chances of vehicle crashes are more than 100 times higher than in Japan and 10 times higher than in India. Globally, 1.2 million people died through RTA each year and as many as 50 million people were injured [2-4].

It was estimated that RTA will be the 3rd leading cause of death worldwide by the year 2020 if preventive actions are not taken to control it. If not, projections are that these numbers may double by 2030 if the status continues [5]. According to Traffic Police data, more than 10,000 people have died because of road accident since 2006. The loss of lives and property due to road accident is enormous. Estimated mortality rate per 100 thousand populations in Bhutan is 14.4, in Thailand 25.4 and in India 16.8 where the figure in Nepal is 15.1 [6].

Nepal has witnessed rapid urbanization, motorization, industrialization and migration of people resulting from socioeconomic growth and development. The political, economic and social changes have altered the health scenario through major social, epidemiological, technological and media transition. Road traffic accidents are the major cause of injuries followed by occupational injuries, burns, violence and suicide related, poisoning, falls and drowning respectively [7]. Although, the conditions of road infrastructure including widening and paving of roads, appear to have been improved in the past few decades. But, it is still very difficult to be accurate about the number of road accidents.
According to the official health statistics of Nepal, the health indicators have enhanced to a great extent during the last four decades [8,9]. Even though, the precise number of deaths and injuries due to specific causes, or any scientific estimates of injury deaths in Nepal are not available from any single source. Lack of reliable and good quality national or regional data is still vacant. Very few studies have been done on RTA in Nepal but there is paucity of study on death due to RTA at Dhanusha district in Terai region of Nepal. Therefore, this study was conducted at Janakpur Zonal Hospital, Janakpurdham, Nepal to access the deaths occurred due to RTA which may be helpful in reducing road traffic accidents in this region.

**Materials and Methods**

This retrospective hospital based study was conducted at Janakpur Zonal Hospital in collaboration with Janaki Medical College Teaching Hospital, Janakpur, Nepal in 2016. A total of 217 unnatural deaths, only RTA death cases registered in Janakpur Zonal Hospital, Nepal were included in this study. Institutional review board of Janaki Medical College Teaching Hospital, Janakpur approved this study and also written letter of consent was also obtained from Janakpur Zonal Hospital, Janakpur prior to the study.

Data collection was done from 28th May to 25th December, 2016 and was cross checked by one another for any missed information by the members of this research group. RTA cases were recorded from the inquest reports and confirmed by the autopsy. Only RTA death cases were included whereas natural deaths, death due to diseases or missed record data of death cases were excluded from the study. The collected data was analyzed with the help of Microsoft Excel and SPSS 20.0 version.

**Results**

**Pattern of Total RTA Death cases**

A total of 217 death cases reported in Janakpur Zonal Hospital of which 26% of death cases were reported as RTA. The results are shown in Figure 1.

**Gender wise Distribution of Death cases**

Figure 2 shows more number of RTA death cases were found in male (78.66%) than female (21.33%).

**Age wise Distribution of Death cases**

Figure 3 shows most of the death cases due to RTA were seen in between 20-40 years with 42.66% than other age group.

**District wise Distribution of Death cases**

The highest number of death cases of RTA were found in Dhanusha district (72%) followed by Mohattari (13%) and Siraha (8%). The results are shown in Figure 4.
The association between death due to RTA with age and gender was found to be higher in less than 40 years with 62.66% of male (62.17%) and in female with 37.28%. The result was statistically significant (p=0.0001) and are shown in Table 1.

Table 1: Association of total death due to RTA in relationship with age group & gender.

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;40</td>
<td>37 (62.71)</td>
<td>10 (62.5)</td>
<td>47 (62.66)</td>
<td>0.0001</td>
</tr>
<tr>
<td>&gt;40</td>
<td>22 (37.28)</td>
<td>6 (37.5)</td>
<td>28 (37.33)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>16</td>
<td>75</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

An accident has been defined as “an unexpected, unplanned occurrence which may involve injury” [10]. Road traffic injuries are a major but neglected public health challenge requiring concerted efforts for effective and sustainable prevention. RTA is a major concern which involves collision of vehicle with another vehicle, pedestrian, animal, road debris, or other stationary obstruction, such as a tree or utility pole [1].

Like most developing countries, road traffic system in Nepal is the most complex and dangerous system which causes road traffic accidents, resulting in people suffering from spinal injury paralysis and ultimately death too. RTA produce disabilities, absenteeism and fatalities that lead to loss of productivity, increase in cost, increased financial borrowing, increased debt and decreased food consumption [11].

This study revealed that 75 (26%) of death cases reported as RTA in Janakpur Zonal Hospital where more number of RTA death cases were found in male 59(78.66%) than female 16(21.33%). Similar findings were also obtained in the study conducted by Prasad and Prasad in Bharatpur, 83 were male and 27 were female [12].

This observation was also supported by Khare et al. [13], Kumar & Srinivasan [14], Ganveer et al. [15], Ngo Anh et al. [16], Dovom et al. [17]. A study conducted at Janakpur Zonal Hospital by Prakash et al. [18]. 2015 reported RTA as 34(21.51%) were male and 31 (23.48%) were female which is in accordance with this study. This was due to the obvious reasons like male dominance in job performance, lower literacy, family norms, cultural aspects, alcohol intake, speed driving etc where the females are mostly confined to the residential place alone.

This study also signifies that most of the death cases due to RTA were present in between 20-40 years with 42.66% followed by 40-60 years and less than 20 years with 25.33% and 20% respectively. Least number of death cases occur in greater than 60 years was 12%. Similar results were also observed by Kumar & Srinivasan [14], Ganveer et al. [15], Kalouguvaki & Goundar [19]; Shah & Jarwani [20]; and Muskal et al. [21].

The possibility of this age group gets in more accidents because they are more prone to aggressive behavior and risk taking. Another possible reasons may be due to chronic risk factors including speeding driving under the influence of alcohol and other psychoactive substances, no use of motorcycle helmets, lack of seat-belts use, child restraints, distracted driving, unsafe road infrastructure, unsafe vehicles, inadequate post-crash care, inadequate law enforcement of traffic laws and also unavailability of driving licenses.

Impairments associated with aging including slow response time and compromised vision and hearing could have a staggering effect on road safety. It is not surprising that over speeding was ranked as the first cause of RTA. This is because most drivers drive beyond the stipulated speed limits on roads and have a high chance of colliding with other vehicles or stationary objects. They are closely related to the driver’s behavior of negligence and indiscipline.

The present study highlights that the highest number of death cases of RTA were found in Dhanusha district (72%) followed by Mohattari (13%) and Siraha (8%). Very least numbers of RTA death cases were from Jhapa, Parsa and Udaypur. This problem may be particularly acute in Dhanusha district because of the high proportion of two and three-wheeled motorized and non-motorized indigenous vehicles, traffic mix and road usage, high population density and number of pedestrians, underdeveloped infrastructures, rapid motorization and negligence of traffic safety rules.

This study found that the association between death due to RTA with age and gender was found to be higher in less than 40 years with 62.66% of male (62.17%) and in female with 37.28% and was statistically significant (p=0.0001). This may be due to that men generally take more risks and drive more powerful and are more reckless drivers than women which could be due to mixture of differences in hormones, brain structure and cultural pressures. Male drivers are consistently more likely than women to admit to all manner of risky and illegal driving behavior.

Conclusion

RTA results in morbidity, mortality and disability have adverse effects on families especially if individual’s livelihoods depend on the victims of the RTA. The present study concludes that RTA is on the increase with progression. Most male adult were victims of RTA and were from Dhanusha district. Driver’s behavior such as negligence and indiscipline factors are closely related to RTA.

This situation can be improved by educating public through the mass media and initiating road safety training campaign. Strict implementation of traffic rules and regulations should be implemented. Helmets & seatbelts have a significant role in preventing severe head injuries which should be advocated & strictly followed. Social awareness such as alcohol and narcotics during driving should be emphasized. Quality of roads by widening, incorporation of signal lights, sign boards, road
dividers and lane segregation for slow vehicles during both day and night should be improved. Improvement of road conditions will be another important measure to control R.T.A. This study was limited to only one government hospital of Nepal and was unable to specify the nature and cause of death involved in R.T.A.

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References