



# Factors responsible for Road Traffic Accidents in India: An Analysis

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## ABSTRACT

*With the development of human civilization and infrastructure, there is danger looming large over the mankind in the form of death and injuries following road accidents particularly in the developing countries including India which is increasing manifold. In India alone 1,41,526 persons were killed and 4,77,000 were injured following road accidents in 2014. There are several factors responsible for the road traffic accidents like fault of drivers, vehicle, roads, weather, etc which needed to be studied and analysed which will help in creating awareness among the public, law enforcing agencies, policy makers and thereby working together in order to curb the menace of vehicular accidents. With this background this paper aims to study the incidence and various factors responsible for road accidents in India. Research method employed is observational and analytical.*

**KEYWORDS :** Road traffic accidents, traffic violators, awareness, World Health Organisation

### I. Introduction

With the development of human civilization, deaths and injuries due to road traffic accidents have been a matter of grave concern worldwide. Children and young people under the age of 25 years account for over 30 per cent of those killed and injured in road accidents. In case of gender, males are more likely to be involved in road traffic crashes than females. The World Health Organisation (WHO) study has projected that by 2020, road accidents will be a major cause of death in India accounting for about 5.5 lakhs death annually.<sup>1</sup>

Prevention and mitigation of road accidents are a major concern for the government of any nation. Although India has undertaken many initiatives and are implementing various road safety programs the overall situation as revealed by data is far from satisfactory.<sup>2</sup> With these issues in background, this paper aims to:

Study the rate of incidence and factors responsible for road accidents

in India with special reference to the state of Assam;

### II. Research Methodology:

**The research design is observational and analytical.**

For this research design both primary and secondary data were collected from the year 2009 to the year 2014. Sources of data includes the National Crime Records Bureau 2014, Statistical Handbook, Assam 2014, books, articles published in national and international journals, newspapers and different internet sources. Data were analysed using word excel sheet.

### II. Incidence rate of road accidents in India

According to the annual publication on Accidental Deaths and Suicides published in the year 2014 by the National Crime Records Bureau, Ministry of Home Affairs, Government of India reveals the trend of road accidents in India which is reflected in Table 1.

**Table 1: Number of Road Accidents in India during 2009 to 2014**

Year	Road Accidents (in thousands)	% variation over previous years	Persons injured (in thousands)	% variation over previous years	Persons killed (in nos.)	% variation over previous years	No. of Vehicles (in thousands)	Rate of Deaths per thousand Vehicles
2011	440.1	2.2	468.8	-0.4	1,36,834	2.2	1,14,953	1.2
2012	440	-0.02	469.9	0.02	1,39,091	1.6	1,41,867	1.0
2013	443	0.7	469.9	-	1,37,423	-1.2	1,59,490	0.9
2014	450.9	1.8	477.7	1.7	1,41,526	2.9	1,59,490	0.9

**Source: National Crime Records Bureau, 2014**

From the above Table, it is found that the number of accidents shows an increasing trend from the year 2011 to 2014. Number of persons killed in accident showed a rising trends, 1,36,834 persons died in 2011 in comparison to 1,41,526 in 2014. The number of persons injured also showed increasing trends from 4,68,800 in 2011 rising to 4,77,000 persons injured in 2014.

### II. Factors responsible for high rate of Road Accidents in India

Different studies have identified various factors responsible for high rate of road accidents in India. They are mentioned below:

#### (i) Surge in motor vehicle production

In India, the motor vehicle population is growing at a faster rate than the economic or population growth.<sup>3</sup> The automotive industry in India is one of the largest automotive industry in the world. In 2010, India was the second fastest growing automobile market in the world after China with a production of more than 3.7 million automotive vehicles.<sup>4</sup> According to the Society of Indian Automobile Manufacturers, annual vehicle sales are projected to increase to 4 million by 2015 and will propel India to be among the world's top five auto-producers

by 2015<sup>5</sup> and with it the road crashes and fatalities will correspondingly increase if proper policies and steps are not taken to curb the traffic menace.

#### (ii) Driver's fault

The major human factors that contribute to the potency of road accidents include drunken driving, indecisiveness, fatigue, distraction and confusion among the drivers.<sup>6</sup> In addition to these in most of the cases the drivers are found to be inexperienced, risk takers, impulsive, aggressive, casual and unaware of the road signage. During 2014, driver's fault was the single most important factor responsible for accidents, where in 2.6% of the total accidents were under the influence of alcohol as revealed by an analysis of road accident data by the Ministry of Road Transport and Highways.<sup>7</sup>

Alcohol impairs driving ability and increases the risk of an accident as well as the severity of its consequences. Conclusions of surveys carried out in several countries have shown that alcohol is the direct cause of 30 to 50 per cent of severe road accidents.<sup>8</sup> Drugs such as barbiturates, amphetamines and cannabis impair one's ability to drive safely and hence must be avoided.

**Table 3: Growth in Number of Vehicles and Road Accidents**

Place	Population (according to 2011 Census)	No. of Motor Vehicles registered (till March 2014)	No of cases Registered		No of persons killed		No of persons injured	
			2012-13	2013-14	2012-13	2013-14	2012-13	2013-14
Assam	3,12,05,576	22,82,643	6562	7271	2252	2407	6472	6734

\*Source Statistical Handbook, Assam, 2014

### (iii) Fault of the pedestrian

According to the Ministry of Road Transport and Highways, Government of India, fault of the pedestrian accounted for 2.4% of road accidents in India during the year 2011.<sup>9</sup> This rate was found to enhance to 2.86% in the year 2014.<sup>10</sup>

### (iv) Fault of the cyclist

Fault of the cyclist accounted for 1.3% of road accidents in India during the year 2011. This rate was found to enhance to 2.86% in the year 2013. In an accident involving a car and a bicycle, a cyclist may suffer death or injury not because of his fault but for the fault of the driver of the car.<sup>11</sup>

In Australia, between 2009 and 2013, 16 cyclists were killed and 43 were injured in Perth metropolitan area. An analysis of those crashes revealed 32 were the fault of cyclist and 23 were the fault of motorist.<sup>12</sup>

### (v) Defect in the road condition

Travel by roads is the most preferred and cheapest form of transport in India. But the Indian roads in cities, towns and the roads connecting them have been in a very poor condition and have accounted for 1.5% of road accident during 2014.<sup>13</sup> Besides using the same road for mixed traffic often contributes to road traffic accidents in India.<sup>14</sup>

### (vi) Defects in the condition of motor vehicle

Defect in the condition of the motor vehicle accounted for another 2.8% of road accidents in India during the year 2014. Manufacturers are required by law to design and engineer cars that meet a minimum safety standard. While advancements are being every day to improve the safety and efficiency of automobiles on the road, problems with the design and functionality of the vehicles themselves sometimes referred to as product liability is one of the top causes of road accidents.<sup>15</sup>

In India, at present there is no law prescribing the observance of minimum safety standard by manufacturers in the manufacturing of vehicles. However, there is a draft proposal called The Road Transport and Safety Bill, 2014 to lay down such minimum safety standards. The objective of this Act is to establish a National Authority known as the Vehicle Regulation and Road Safety Authority of India for promoting road safety and regulating motor vehicles.<sup>16</sup>

### (vii) Weather condition

Weather conditions in India accounted for 3.2% of the motor vehicle accidents in India during the year 2014. While drivers have some control over driving recklessly, while impaired and while distracted there is little they can do about the weather conditions. Weather is most certainly out of our control and come rain or shine the weather contributes to a fair few car accidents. Environmental factors - unfavourable weather conditions like mist, snow, smoke and heavy rainfall which restrict normal visibility and makes driving unsafe.<sup>17</sup>

### (viii) Other causes

Other causes accounted for 14.8% of road accidents in India during the year 2014.

## III. Discussion:

It has been observed over a period of time, that the numbers of people killed due to road traffic accidents showed increasing trends which was depicted in the Table no 1. In 2014 about 51 cases of road accidents took place every hour where in 16 persons were killed.

Different studies have revealed increase incidence of accident during nights. In order to prevent road mishaps at night, auto-dippers must be mandatory installed in vehicles. This device can sense the high

beam of two vehicles coming from the opposite direction and automatically shift the beam of the vehicle where it is fitted. The sensor fixed in the windshield can sense the light coming from a distance of 80 to 100 metres thereby minimising the road mishaps. Assam will be the first state to implement mandatory fitting of such an essential safety device<sup>18</sup>. According to the various records, over five lakhs road accidents take place in the country annually, of which, 41 per cent happen during night out of which 18 per cent of the mishaps are caused by vehicle headlight glare. As per the National Crime Records Bureau on Accidental Deaths & Suicides in India in 2014, the state of Assam accounted for 7825 road accidents registered by the police, due to which 6562 persons were injured and 3212 were killed. All over in India 26.4% victims of road accidents were riders of 'two wheelers' and trucks/lorries, cars and buses have accounted for 20.1%, 12.1% and 8.8% respectively of road accidental deaths. The study also reported that most of road accidents were due to over speeding accounting for 36.8% of total accidents which caused 48,654 deaths and 181,582 persons injured, dangerous/ careless or overtaking caused 1,37,808 road accidents which rendered 42,127 deaths and 1,38,533 persons injured during 2014. Besides 3.2% of road accidents were due to poor weather condition.<sup>19</sup>

## V. Conclusions

The World Health Organisation has projected that by the year 2020, road accidents will be a major killer in the young age groups of people in India. So if effective measures are not taken to tackle this menace, it may cripple the nation's economy. It is imperative on the parts of the government to take policy decisions looking into the safety aspects of the road users as well as infrastructure and widening of roads. Creating awareness about traffic rules to the public and school going children should be carried out at regular intervals. Traffic police and motor vehicle inspector should carry out surprise check at regular intervals and impose fines to the traffic violators and suspend the driving license for certain period for drunken driving. At the same time policy makers must take lessons from other developed countries like Sweden who has zero tolerance on death following road accidents and try to adopt their system to contain road accidents in our country. Hence to reduce the incidence of vehicular accident, comprehensive measures pertaining to multidimensional approach must be adopted where in healthcare settings, Judiciary, law enforcing agencies, political class including the vehicles manufacturer join hands together to fight and contained the injuries and death due to road accidents.

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