

Road Traffic Accidents in Chittorgarh District: A Comprehensive Study

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Abstract

Road traffic accident is an unintended collision of one motor vehicle with another, a stationary object, or person, resulting in injuries, death and or loss of property. Road accident often result in injuries, death and property damage either on highways or in city areas. In the world each year 1.2 million people lose their lives due to road traffic injuries while in India every day, road traffic injuries take the lives of almost 400 people. A comprehensive observational study was conducted in district Chittorgarh to analyze the specific pattern and reasons of road accidents on surrounding highways as well as under urban circumstances. This study emphasizes that most of the victims of road accidents are between 15 to 35 years age group. This age group considered as an earning group in our society. Death in road accidents puts a long lasting adverse and sorrowful impacts on a family. The study also throw light on the certain killer points in Chittorgarh. It also discusses about the practical suggestions and solutions to reduce the deaths and casualties in road accidents.

Key Words: Road Traffic Accidents, Collision, Killer points, Casualties, Comprehensive, Observational.

Introduction

The district Chittorgarh is a historical place of Rajasthan. In ancient time it was the capital of Mewar state. Its present territory is composed of different old states. The district Chittorgarh as it exists now, was old Mewar state, a part of old Tonk state. The district was formed in 1948 with the head quarter at Nimbahera that has included Nimbahera, Dungla, Bhadesar, Kapasan, Rashmi, Chittor and Bhdesar as tehsil. However, at the time of termination of Rajasthan state in 1950 the head quarter was shifted to Chittorgarh from Nimbahera.

Chittorgarh district is situated in the south-eastern part of Rajasthan. It extends from 24°13' to 25°13' north latitude and from 74°04' to 75°53' east longitude. It is surrounded by Kota in east and Pratap Garh district in south-west, Udaipur in west and Bhilwara and Bundi in North. The

total geographical area of the district is 750639 hectares, which stand at 3.03 percent of the total area of the state.

National Highway from Chittorgarh to Jaipur, Chittorgarh to Kota, Chittorgarh to Udaipur and Chittorgarh to Nimbahera are passing through the district. The large-scale cement industries & Hindustan Zinc Ltd. are benefitted from these highways. These highways are further linked with other metro cities such as Ahmedabad, Mumbai, Delhi, Chandigarh etc. Chittorgarh is also a railway junction and has been connected with the various metro cities. The huge production of cement, marble and granite has been transported through railway, trucks, containers to various cities. The total length of roads is 3915.74 K.M. in district.

The completed Golden Quadrilateral Highway System passes through Chittorgarh, connecting it to the most of India. The East-West Corridor (Express Highway) also crosses it. Chittorgarh is situated on National Highway No. 76 & 79. national highway 76 connects to Kota. Chittorgarh is well connected to all parts of India by roads. The Golden Quadrilateral Road Project and North-South-East-West corridor expressways pass through Chittorgarh City. Being a central point of various highways Chittorgarh district has a vulnerable place according to the road accidents.

Methodology

A descriptive study was planned on the basis of various possible sources of information like; hospitals, police stations, toll plazas, accident victims, insurance companies etc. Using data base, the major accident prone or killer points were traced out in Chittorgarh district. Useful and practical suggestions are given on the basis of information collected. The information generated from this study was disseminated to promote awareness and participation among the professionals, public media on various aspects of the road traffic accidents.

Review of Literature

Jha, Nilambar & Srinivasa, DK & Roy, Gautam & Jagdish, Sadasivan in 2003, studied about the injury pattern among road traffic accident cases, they conducted their study in south Indian states. Mohan, Dinesh, in 2009 studied in detail about the road accidents in India. He discussed various aspects related to the road accidents in India. Goswami, Ajit & Sonowal, Ripunjoy. In 2011 conducted a statistical analysis of road traffic accidents in Dibrugarh city, Assam, India. In 2013, Kharya, Pradip & Gupta, Arti & Solanki, Hariom Kumar, write a review in detail on the topic 'Road traffic accidents so easy to occur, so difficult to prevent.' Raghav, Pankaja & Prasad, NB & Dholakia, M. in 2015 conducted a study of road traffic accidents and road safety behavior in Pune.

Observation And Discussion

Road accident is most unwanted thing to happen to a road user, though they happen quite often. The most unfortunate thing is that we don't learn from our mistakes on road. Most of the road users are quite well aware of the general rules and safety measures while using roads but it is only the laxity on part of road users, which cause accidents and crashes. Main cause of accidents and crashes are due to human errors.

Causes of Road Accident

1. Over Speeding
2. Drunken Driving
3. Distractions to Drivers
4. Red Light Jumping
5. Avoid Safety Gear
6. Wrong Manner Overtaking
7. Non-adherence to lane driving
8. Unawareness towards traffic rules
9. Unfit vehicles
10. Untrained and unskilled drivers

Over speeding is a major cause of road accidents in district Chittorgarh. Over speeding is equally responsible for accidents on highways and in city areas. Increase in speed multiples the risks of road accidents in Chittorgarh. Mixing drinking with driving reduces concentration. For every increase of 0.05 blood alcohol concentration, the risk of accident doubles. Though distraction while driving could be minor but it can cause major accidents. Banners, hoardings, animals on the road are major distraction for drivers specially on highways in district Chittorgarh. Traffic lights are responsible for the systematic movement of traffic in city areas. Avoid safety gears like not wearing seat belt, negligence towards traffic rules, wrong manner overtaking, unfit vehicles, untrained and unskilled drivers are other responsible factors of road accidents in Chittorgarh district.

Different factors and their contribution in road accidents in Chittorgarh

Drivers, pedestrian, passengers, vehicles, road conditions. Weather conditions are different factors which contribute in road accidents in different ways.

S.N.	Various Factors	Contribution in Road Accidents
1.	Drivers	Over-speeding, rash driving, violation of rules, failure to understand signs, fatigue, alcohol.
2.	Pedestrian	Carelessness, illiteracy, crossing at wrong places moving on carriageway, Jaywalkers.
3.	Passengers	Projecting their body outside vehicle, by talking to drivers, alighting and boarding vehicle from wrong side travelling on footboards, catching a running bus etc.
4.	Vehicles	Failure of brakes or steering, tyre burst, insufficient headlights, overloading, projecting loads.
5.	Road Conditions	Potholes, damaged road, eroded road merging of rural roads with highways, diversions, illegal speed breakers.
6.	Weather conditions	Fog, snow, heavy rainfall, wind storms, hail storms.

In district Chittorgarh average 632 road accident occurs and average 246 victims of road accident lose their lives yearly. The 58% of these road accidents usually take place on highways while remaining 42% occurs in city areas. Table 1.1 shows the overall scenario of road accidents and their victims in Chittorgarh district since last five years.

TABLE 1.1

ROAD ACCIDENT PROFILE: CHITTORGARH

Year	Road Accidents	Victims Died	Victims Injured	Damaged Motor vehicles
2011	600	219	856	781
2012	633	250	928	998
2013	627	250	771	929
2014	682	270	894	708
2015	663	261	776	809
2016	587	224	662	729

Source: Office, district SP, Chittorgarh

In the study most of the road accident on highway were reported during night between 12am to 6 am, while in city areas the most of road accidents were reported during day time between 6am to 12noon. the major reason of highway road accident were hurry and sudden nap due to restless unstopped driving for several hour. In city area the hustle-bustle of peak time [10am] is responsible for road accidents. Table 1.2 shows the chronological profile of road accidents in district Chittorgarh.

TABLE 1.2

Chronological Profile of Road Accident in Chittorgarh

Characteristics		Frequency	
		On Highways	City Areas
Time	12 AM-6AM	High	Low
	6AM-12Noon	Medium	High
	12Noon-6PM	Medium	High
	6PM-12AM	High	Medium
Weather	Summer	Medium	Medium
	Winter	High	Medium
	Rainy	High	High
Place of Death	Spot	High	Low
	On Route to Hospital	Medium	Medium
	Hospital	Medium	High

Source: Data Analysis and Observation

Study area district Chittorgarh is surrounded with the net of highways N.H. 8 and 76 make a circular around the district so due to the surrounding national highways certain “killer point” are the places where accident usually occurs. Certain factor makes these “killer point” vulnerable for road accident. Following table shows the list of the “killer point” which are vulnerable according to road accident in Chittorgarh. Table 1.3

TABLE 1.3

KILLER POINT: CHITTORGARH

S.N.	Killer Point	N.H.	Reasons
1	Aajoliya ka Khera	N.H. 79	Residential area, N.H.
2	Mangalwar Choraha	N.H.76	Traffic and turn at 90 ⁰
3	Panchdewla	N.H. 76	Bus stand and Dense residential area
4	Bansen	N.H. 76	Bus stand, Link Road to village Bansen
5	Rithola Choraha	N.H. 76	Merging of roads form various directions (N.H. 76
6	Bassi near Ramdwara	N.H.76	Entry way to town bassi

7	Kapasan Choraha	N.H. 76	Cross road, entry point of Chittorgarh residential area as well as industrial area of Chanderia, engaged with heavy vehicles.
8	Narpat ki Kheri Over Bridge	N.H. 79	Way to Chittorgarh and Kapasan, absence of any sign board
9	Bagund to Bhadsora Choraha	N.H.79	Sanwaliya ji temple, illegal parking of heavy vehicles, heavy traffic area.
10	Nagari	N.H. 76	High speed of vehicles and heavy traffic
11	Pandoli Choraha		Sharp turn and traffic, no sign board
12	Soniyana	N.H. 79	Sharp turn and traffic
13	Hoda Choraha	N.H. 79	Main entry point of Bhadesar
14	Ochri Overbridge	N.H. 76, 79	Merging of N.H. 79 and 76, drivers have to use wrong side for Kota highway.
15	Near Nehru Park, Chittorgarh	City	Merging traffic of over bridge and under bridge.
16	Madhuvan Choraha, Chittorgarh	City	Way to Nimbahera, no speed breaker, dangerous cuts between divider.
17	Sr. Sec. school to Zinc gate, Chanderia	City	Industrial area, heavy traffic.
18	BCW gate to petrol pump	City	Industrial area, heavy traffic, no

			speed breaker.
19	Medikhera Fatak	Chandera, N.H. 79	Railway crossing and merging traffic with N.H. 79

Source: Data Analysis and Observation

In this study, four-wheeler vehicles such as buses tempo, car, trucks etc. caused more than two-third of accident [69.22] of the total cases. The second major killer was two wheelers and three wheelers with 18.66%.

In 12.12% cases the offending vehicle could not be identified but it was clear that the victims died due to road accident. In the city area the pedestrians were the worst sufferers.

Being the cause of death, head injury was at the top during study. An interesting fact about road accident Chittorgarh is that the males constituted 78.22% and females constituted only 21.78% of the total victim. Males being the breadwinner in majority of family are exposed more frequently to outdoor work than female. This fact explains the involvement of maximum number of males in road accident death.

Table 1.4

Frequency of Offending Vehicles on Highways and City Areas

S.N.	Types of Offending Vehicles	Highways	City Areas
1.	Two wheelers	Medium	High
2.	Three wheelers	Low	Medium
3	Four wheelers	High	Low

Result And Findings

In district Chittorgarh road accident continues to be a growing menace, incurring heavy loss of valuable human resources, along with wastage of potential economic growth. The study of road accident in Chittorgarh points out certain reasons responsible for road accident in district. Some major human factor are driving at high speed is an important reason for road accident. On highway drivers usually cross the maximum speed limit decided for the specific vehicle. Overtakes, make from wrong direction is another reason for vital road accident in Chittorgarh.

In the highway in Chittorgarh, amongst the types of offending vehicle involved in road accident, four-wheeler is observed to be the responsible. It reveals that heavy four wheelers like heavy trucks, multi- excel, vehicles, long trucks, tractor-trollies are usually driven by untrained and drinker drivers. An increase in the number of heavy motor vehicles and congested narrow road contribute to the same.

Ignorance of traffic rules and safety regulation, inadequacy of vehicle health, alcohol intake by driver, use of mobile phones, crossing the vehicle speed limit, no sign board and wrong sign board at crossing, merging etc. have contributed significantly to the rise in number of cases of traffic accident deaths.

Bad road condition and pits are equal responsible for the loss of lives due to road accident. In developing countries like India, where poverty and unemployment push the people towards the urban areas in the study a highly significant relationship was noted between place of accident and residence of the victims. It was observed that incidents were more in city than rural areas with the victims. Mostly belonging to urban and semi – urban areas this may be attributed to the process of rapid urbanization that has resulted in an unprecedented revolution in the growth of motor vehicles worldwide.

According to the information collected from police station and road transport department maximum accident took place, where merging more than two road or sub ways merging highways. Few studies reported in Chittorgarh pedestrians as the majority of victims in city areas due to ignorance to traffic rules and traffic signals, talking over the mobile phones, lack of assessment of speed of vehicle and poor lighting of streets.

Poor visibility in winter due to fog and heavy rain, cattle are some another natural reasons responsible for the road accidents.

Suggestions to Reduce Road Accidents in Chittorgarh

1. Combined Efforts- Combined efforts are necessary to stop the road accidents in Chittorgarh. Both governmental and non-governmental agencies are responsible to stop the road accidents. Strong political leadership is required for the success of all combined efforts. Four major stakeholders which can contribute to reduce the rate of road accidents and number of victims are: 1. Police 2. Administration 3. RTO Department 4. NHAI.
2. Strong Actions from Traffic Police- Strong action should be taken by district traffic police against the rule breakers on the road. Strong action should be taken against drunken drivers, overloaded vehicles, traffic rule breakers. Action should also be taken against the unfit vehicles, breaking the no entry rules in the urban areas of Chittorgarh.
3. According to the directions of state government, it is duty of the local administration to find out the reasons, issues and killer spots of road accidents in every district. It is also necessary for DM and SP reach at the place of accident as soon as possible, if the victims are more than five.
4. Role of the RTO department has a vital role in the efforts to reduce the road accidents. Fitness of the vehicle, registration, insurance, driving license and other vehicle related issues should be checked properly by RTO officers of district Chittorgarh. Unfit and illegal vehicles are dangerous not only on highways but also in the urban areas. A regular

checking for vehicles specially for heavy vehicles should be conducted from RTO department of Chittorgarh.

5. National Highway Authority of India (NHAI) is an autonomous agency of the government of India. NHAI is responsible for the management of a wide network of over 70,000 km of national highways of India. It is a nodal of the ministry of Road Transport and Highways. The duties of NHAI are; to keep the condition of highways up to date, handle the management of essential signboard on highways for providing information's to drivers, maintain minimum required medical aid at toll plazas such as ambulance, first aid kit, oxygen etc. It is one of the most important duties of NHAI to have efforts towards minimize the road accidents as well as victims. Up to date medical facilities at toll plazas can play a major in reducing the casualties in road accidents, specially on highways.
6. To reduce road accidents in city areas, some provisions and efforts should be undertaken like; separate provision for pedestrian and safe pedestrian crossings, good street lighting and traffic calming measures in high-risk areas can be more effective. Creating public awareness towards urban road accidents can save more lives.
7. The legal standards for the passenger-ferrying buses and trucks should be regulated. The number of passengers and quantity of goods should be permitted according to rules.
8. The involvement of society is also important to reduce the road accidents in Chittorgarh district. Many campaigns such as Motorcycle Helmet Campaign, Anti-Drunk-Driving Campaign should be run among the society to spread awareness.
9. An efficient injury surveillance system is essential for providing first aid to the victims, at spot. For this a solid ambulance coverage should be developed around the district Chittorgarh, so that victims can get an essential and instant medical help as earliest as possible. In an accidental cases first one or two hours are called 'Golden Hours'. Quick medical assistance can save many lives not only on highways but also in city area. There is a requirement of a multispecialty Trauma – hospital in Chittorgarh, because the district hospital do not have enough facilities and specialist doctors for such cases, and hence doctors have to refer the serious victims either to Udaipur or Ahmadabad and many victims lose their lives during the journey. It is necessary for toll plazas to have sufficient first aid for road accident victims.
10. Awareness towards the help of road traffic accident victims is necessary now days. Generally, people do not help the victims of road traffic accidents or adopt a casual attitude towards them. People should be encouraged to help the victims quickly so that the vitality of accident can be reduced down.
11. On the highways in Chittorgarh setting speed limits for all motorists is an effective strategy that protects all road users. The political leaders and bureaucrats need to help formulate policies based on global agenda to reduce the road carnage.

Conclusion

Road traffic accident is a major cause of death in India. Specially in developing countries road traffic accidents play a vital role in the increasing death rate of people among the age group 18 to 35. Road traffic accidents not only results in death but also responsible for injuries, damage and loss of property. It is observed that in more than 50 % cases of road traffic accidents, human error or negligence towards traffic rules, are major responsible reasons. As human life is a gift of God. It is our duty to reduce the death rate and injuries from road traffic accidents. Public awareness can play a major role among all other efforts to prevent road traffic accidents.

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