urnal or	Original Research Paper	General surgery
Anipet Ageneration	AWARENESS OF THE HELMET U AND ALCOHOL CONSUMPTION IMPACT OF HELMET USE ON INJURY IN MOTORCYCLIST II LUCKNOW UTTAR	SE,USING CELL PHONES WHILE DRIVING AND SEVERITY OF HEAD NORTHERN INDIA, PRADESH
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In India Two-wheeler are m symbol of personal identity	nain source of public transport where they are used mostly ".But due to population overload and majority of rural unec	for recreation, as a lifestyle accessory or a lucated population people are unaware or

symbol of personal identity. But due to population overload and majority of rural uneducated population people are unaware or insincere of traffic rules. So the frequency of traffic collisions in India is amongst the highest in the world. Approximately half of all deaths on the country's roads are among vulnerable road users - motorcyclists, pedestrians and cyclists. Accidents due to drunken driving are a major problem in India. The problem is unrecognized and hidden due to lack of good quality research data. The key to safe driving in India is to come armed with patience. Helmet is a life-saving instrument for motorcyclist. Government also launched many awareness programmes for utility of helmet in safety through print as well as electronic media in India. Government of India will have to take immense action to educate the younger generation about good traffic sense through programmes and some strict law abiding punishment should be implemented.

**KEYWORDS** 

Helmet, Road traffic accident, Head injury, Glasgow coma scale.

## INTRODUCTION

India is a developing country the number of motor vehicles is increasing very rapidly in last decadeon the other hand the good condition of roads, traffic rules education and awareness of safety measures is not increasing in the public accordingly.

Motorcycles are mainly a luxury good in the developed world, where they are used mostly for recreation, as a lifestyle accessory or a symbol of personal identity. In developing countries, motorcycles are overwhelmingly utilitarian due to lower prices and greater fuel economy. Of all the motorcycles in the world, 58% are in the Asia Pacific and Southern and Eastern Asia regions, excluding car-centric Japan<sup>(1)</sup>.

Helmet is undoubtly a life saving instrument for motorcyclist. Government also launched many awareness programmes for utility of helmet in safety through print as well as electronic media in India. But due to population overload and majority of rural uneducated population the message could not be conveyed properly to them. We have also noticed that people in rural north India have tendency to dodge the traffic police while driving without helmet despite using it permanently. So this condition needs a change in government policy by making a strict law and to launch a vigorous awareness programme for using helmet while riding motorcycle.

The frequency of **traffic collisions in India** is amongst the highest in the world. A **National Crime Records Bureau** (NCRB) report revealed that every year, more than 135,000 traffic collisionrelated deaths occur in India.<sup>[2]</sup> In New Delhi, the capital of India, the frequency of traffic collisions is 40 times higher than the rate in London, the capital of the United Kingdom.<sup>[3]</sup> The *Global status*  report on road safety 2013 estimates that more than 231 000 people are killed in road traffic crashes in India every year. Approximately half of all deaths on the country's roads are among vulnerable road users - motorcyclists, pedestrians and cyclists<sup>(4)</sup>.

A heterogeneous traffic mix that includes high-speed vehicles sharing the road space with vulnerable road users as well as unsafe road infrastructure and vehicles that are in poor condition all contribute to the high fatality rates seen on India's roads. India is one of the countries included in the Bloomberg Philanthropies Global Road Safety Programme which is being conducted over five years (2010-2014) by a consortium of international partners together with national governments and local organizations<sup>[4]</sup>.

Traffic collision-related deaths increased from 13 per hour in 2008 to 14 per hour in 2009. More than 40 per cent of these casualties are associated with motorcycles and trucks. The most accident-prone time on Indian roads is during the peak hour at afternoon and evening.<sup>[1]</sup>

According to road traffic safety experts, the actual number of casualties may be higher than what is documented, as many traffic accidents go unreported. Moreover, victims who die sometime after the accident, a span of time which may vary from a few hours to several days, are not counted as car accident victims.<sup>[1]</sup>

In 2015, one person dies every 4 minutes in roads accidents in India, according to NGO 'Indians for Road Safety'.  $^{\rm (1)}$ 

The number of mobile users have tremendously increased in last decade. The use of mobile phones is dangerous for motorcyclist as well as pedestrian also because it distracts the mind from traffic

rules as well as fast running vehicles. Over speeding with mobile use while driving is seen very frequently in young adults in northern India, which is a major cause of some serious road traffic accidents these days. Government launched many programmes regarding no use of cell phones while driving a vehicle but tendency of people is changing very slowly due to unawareness of laws and traffic rules in northern India. Very strict policies are required for making laws and vigorous awareness programmes are required for no use of cell phones while driving a vehicles.

According to the report, around 30% of the total population of India consumed alcohol in the year 2010. 93% of alcohol was consumed in the form of spirits, followed by beer with 7% and less than 1% of the population consumed wine. The per capita consumption of alcohol in the country increased from 1.6 litres from the period of 2003-2005, to 2.2 litres from the period of 2010-2012<sup>[5]</sup>.

On the 'Years of Life Lost' scale, which is based on alcoholattributable years of life lost, India has been rated 4 on a scale of 1 to 5. This implies that the alcohol consuming population of our country loses most years of their life because of drinking and its consequences<sup>[5]</sup>.

Accidents due to drunken driving are a major problem in India. The problem is unrecognized and hidden due to lack of good quality research data. A study conducted by Alcohol & drug Information Centre (AIDC), India revealed that around 40% of the road accidents have occurred under the influence of alcohol. Young male drivers are at a high risk of such accidents<sup>6</sup>.

In north India the many celebrations like marriage ceremony(baraat), birthday parties, and conferences are increased very rapidly these days. The tradition of drinking alcohols and dancing after drinking is becoming very popular for enjoyment these days especially in youngsters and after the celebrations are over drunken driving is very common. Most of the cases seen in hospitals of road traffic accidents are belong to the above scenario.

# STUDY DESIGN: OBSERVATIONAL STUDY DESCRIPTIVE TYPE AIM AND OBJECTIVE

Awareness of the helmet use, using cell phones and alcohol consumption while driving and impact of helmet use on severity of head injury in motorcyclist in northern India.

We have concluded the patients of road traffic accidents (Motorcyclist only) coming to the Accident and Emergency Department of IIMS&R, Lucknow aged between 18-60 years. We further carry forward our study by taking history, physical examination and relevant investigation.

#### MATERIAL AND METHOD

The study was carried out in the department of Accident and Emergency in Integral Institute of Medical Sciences and Research Lucknow in India over a period of three years from July 2012 to June 2015.

Cases were selected by random sampling. Any patient attending Accident and Emergency Department with history suggestive of road traffic accident while riding motorcycle were selected for the study. The study was started only after taking ethical clearance from Institute Ethics Committee. Patients were resuscitated first and while best possible treatment was going on a detailed history was taken about use of helmet while driving, use of cell phone while driving and alcohol intake was taken to the patients in case of unconsciousness patient history was taken by attendants, cases having any severe other injury like blunt injury chest, blunt injury abdomen or major long bone fracture were excluded from the study on the basis of physical examination and investigations. Brought dead patients were also excluded from the study. Patients with minor injuries like abrasions and lacerations were included in the study. History of head injury was taken on the basis of symptoms viz. vomiting, loss of consciousness, seizures, ENT bleed and amnesia. Examination was done through assessing Glasgow coma scale and severity of head injury were classified according the GCS score. NCCT head findings are not included in the study.Vegetative state of GCS was excluded from the study.

#### **Glasgow Coma Scale**

The Glasgow Coma Scale is based on a 15 point scale for estimating and categorizing the outcomes of brain injury on the basis of overall social capability or dependence on others.

The test measures the motor response, verbal response and eye opening response with these values:

# I. Motor Response

- 6 Obeys commands fully
- 5 Localizes to noxious stimuli
- 4 Withdraws from noxious stimuli
- 3 Abnormal flexion, i.e. decorticate posturing
- 2 Extensor response, i.e. decerebrate posturing
- 1 No response

#### II. Verbal Response

- 5 Alert and Oriented
- 4 Confused, yet coherent, speech
- 3 Inappropriate words and jumbled phrases consisting of words
- 2 Incomprehensible sounds
- 1 No sounds

### III. Eye Opening

- 4 Spontaneous eye opening
- 3 Eyes open to speech
- 2 Eyes open to pain
- 1 No eye opening

The final score is determined by adding the values of I+II+III. This number helps medical practitioners categorize the four possible levels for survival, with a lower number indicating a more severe injury and a poorer prognosis:

#### Mild (13-15):

# Moderate Disability (9-12):

- Loss of consciousness greater than 30 minutes
- Physical or cognitive impairments which may or may not resolve
- Benefit from Rehabilitation

#### Severe Disability (3-8):

Coma: unconscious state. No meaningful response, no voluntary activities

#### Vegetative State (Less than 3):

- Sleep wake cycles
- · Arousal, but no interaction with environment
- No localized response to pain

#### **OBSERVATION & RESULT**

Total 350 patients were taken in the study of period of three years from July 2012 to June 2015.

Age of patients were 18-60 years mean age 34.6 years. Out of 350 patients 204 patients were 18-25 years, 84 patients were 26-40 years and 62 patients were 41-60 years of age.



Out of 350 patients 284 were males and 66 were females. Out of total 350 patients 226 patients were not using helmet. Out of 284 male patients 212 patients were not wearing helmet. Out of 66 female patients 14 patients were not wearing helmet.

TOTAL	MALES	FEMALES
350	284	66
226	212	14
64.57%	74.64%	21.21%

Out of 284 male patients 52 patients were using cell phone while accidents.

Out of 66 female patients 4 patients were using cell phone while accidents.

TOTAL	MALES	FEMALES
350	284	66
56	52	4
16%	18.30%	6.06%

Out of 284 male patients 122 patients were drunken at the time of accident.

Out of 66 female patients none were drunken at the time of accident.

TOTAL	MALES	FEMALES
350	284	66
122	122	0
34.85%	42.95%	0.00%

Severity of head injury in patients not using helmet (total 226) Mild Disability (13-15):56 Moderate Disability (9-12):29 Severe Disability (3-8):16

	MILD	MODERATE	SEVERE
TOTAL	DISABILITY	DISABILITY	DISABILITY
	(13-15)	(9-12)	(3-8)
226	56	29	16

12.83%

07.07%

Severity of head injury in patients using helmet (total 124) Mild (13-15):16 Moderate Disability (9-12):8 Severe Disability (3-8):3

24.77%

44.69%

TOTAL	MILD DISABILITY (13-15)	MODERATE DISABILITY (9-12)	SEVERE DISABILITY (3-8)
124	16	08	03
27.77%	12.90%	06.45%	02.41%



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#### DISCUSSION

It is difficult to control the amount of accidents on the roads, as many motorists do not obey traffic laws. There are very few pedestrian crossings, which makes both driving in India and being a pedestrian rather dangerous. The only good news is that people's awareness has been raised, leading to the founding of road safety groups such arrive safe<sup>[7]</sup>.

If you do not want to rely on public transportation to get around, it is highly recommended that you hire a chauffeur who has a couple of years of experience. They will have a better grasp of what driving in India is all about as they are more familiar with the rules of the road. Due to India's low wages, these drivers are affordable and, more importantly, they will get you to your destination in one piece<sup>[7]</sup>.

#### The factors for the growth of Indian motorcycles<sup>[8]</sup>:

- The Gross Domestic Product has grown to 8%
- The average family income has increased
- The finance have become easier to access
- The reduction in taxes and duties
- Introduction of international standards in India
- The economic and fuel-efficient engines
- The teenager and the youth using more and more motorcycles

Driving in India will require you to share the road with rickshaws, speeding trucks, mopeds packed to their maximum capacity, dozens of other cars, and animals. Traffic in India's gigantic cities is also very noisy. Many Indian drivers honk their horns relentlessly. Contrary to the standards you might be used to in your home country, a horn is mainly used as a means of expressing oneself whilst driving in India conveying every kind of emotion while using a single instrument. Some might also do it just for the sake of it. There is nothing to be done about this, except hop on the bandwagon and honk your horn!

Despite the country being third in the world as far as the extent of its road network is concerned, India's more than 4.1 million kilometres of roadways are often far from well developed. Potholes, speed breakers, shards of glass, and cow dung are just some of the things you may find on the road while driving in India. Additionally, flooding may occur, which will in turn cause sewers to overflow, this can drastically slow down the pace of driving. The marriage, birthday or funeral procession of an important person in a larger city may cause an eternal traffic jam with lots of honking horns<sup>[9]</sup>.

A vital piece of information for safe or at least, safer driving in India is the unofficial pecking order for the right-of-way: cows (because they are considered holy), large trucks, buses, SUVs, cars, mopeds, rickshaws, bicycles, and, lastly, pedestrians. Many motorists play 'chicken' while driving, meaning that they will drive in the middle of the road, challenging oncoming traffic to move aside into the ditch. Try not to get involved in this game, and if your driver does it, just look away and hope for the best!

The key to safe driving in India is to come armed with patience. Engaging in road rage is extremely dangerous and will get you nowhere, except perhaps into the nearest hospital. Keep your eyes peeled and be ready to break, swerve, and accelerate all at virtually the same time.

If you happen to be involved in an accident, try to settle it with the other driver as quickly as possible. Avoid drawing the attention of other drivers or pedestrians. They will usually take the side of the Indian driver or the driver with the smaller vehicle, and this may erupt in a fight.

Discrepancy between observed and self-reported helmet-use rates suggest that observational studies can provide more valid helmetuse rates than those that are self-reported. Increased enforcement might be an effective strategy to increase helmet-use among drivers who are aware of its importance<sup>[10]</sup>. Dinesh Mohan, coordinator of the Transport Research and Injury Prevention Programme at IIT-Delhi, says "Studies show that the compulsory use of helmets by two-wheeler riders alone can reduce accident deaths by 20 to 30 per cent<sup>[11]</sup>.

The rate at which the number of two-wheelers in India is rising is 20 times the rate at which the human population is growing. In such a scenario, fatalities are only going to rise if things do not change fast<sup>[11]</sup>

The risk of death is nearly 2.5 times more among riders not wearing a helmet compared with those with a helmet. Studies show that serious head injuries can happen even at low speeds (10-15 kmph).

#### CONCLUSION

In our study we find out that patients who wearing helmet had less serious injury compare to patients not wearing helmet. The ratio of severity of injuryalso increasing in patients (8.41%) who were not wearing helmet compare to patients (2.42%) who were wearing helmet. So use of helmet by two-wheeler riders alone can reduce accidental severe injury about 29 percent.

Female rider of north India are more aware in following road traffic rules and wearing helmet during driving than male counterparts as our study suggests. Also people of middle and old age are more aware than younger generation shows it denotes that government of India will have to take immense action to educate the younger generation about good traffic sense through programmes and some strict law abiding punishment should be implemented.

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