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Original Research Article

Offenders of Helmet Law in Bangalore: Characteristics and Reasons for Non-Usage

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ABSTRACT

In some low-income and middle-income countries head injuries are estimated to account for up to 88%. According to Indian Motor vehicle act-1988 and the Karnataka motor vehicle rules 1989 every person while driving a motor cycle of any type should wear a protective headgear (Helmet).
Though the helmet use has been compulsory for motorcycle riders and pillions in Bangalore city since enactment of mandatory helmet law in 2016, the recent surveys shows that the prevalence of helmet usage remains low, this paper has sought to explore the reasons for non-usage of helmet among the two wheeler users. A total 231 riders were interviewed at randomly selected traffic junctions of the city. Majority of the offenders opined as wearing of helmets hinders their visibility/hearing, hair loss and discomfort to wear. And most of the offenders perceived that helmet was necessary for law purpose and for high speed riding.

Key Words: Non-usage of helmet, Reasons for non-usage, Helmet law offenders, Bangalore

INTRODUCTION

Globally, there is an upward trend in the number and use of motorcycles and bicycles, both for transport and recreational purposes. Indeed, most of the growth in the number of vehicles on the world's roads comes from an increasing use of motorized two-wheelers. Asian countries, in particular, are expected to experience a considerable rise in the number of motorized two-wheeler vehicles on their roads. [1]

In India 69% of the total number of motor vehicles are motorized two-wheelers, considerably higher than in high-income countries reflecting this difference, the levels of motorcycle rider fatalities as a proportion of those injured on the roads are typically higher in low-income and middle-income countries than in high-income countries. For instance, 27% of road deaths in India are among users of motorized two-wheelers, helmets as a protective measure have been identified to be effective towards head injury prevention. [1]

Two-wheelers being smaller in size and not highly visible on the road make the rider particularly vulnerable to crashes. In the event of a two-wheeler crash, the head of the driver or pillion directly hits a mobile or immobile object causing injury. Several studies point to the fact that head is the most commonly injured organ among two-wheeler occupants in case of crashes. It is found that about 40 to 50 percent of those injured and more than one-third of those killed in two-wheeler crashes are found to have sustained brain injuries such as concussion, contusion and hemorrhage. [2]

According to Indian head injury foundation, over 1.5 million people suffer from head injury and brain trauma every year. Sadly, 1 out of every 6 victims dies

because of a lack of optimal care during the „Golden Hour", the period immediately after an accident. India is where 60% of Traumatic brain injury cases are caused the road accidents and the victims usually pedestrians and motorcyclists. [3] In 2012 Bangalore has 12.8 accident severity index (road accident related deaths per 100 accidents) this is due to the city has developed in a disintegrated urban from spreading along major traffic corridors Congestion on arterial roads is due to haphazard development, narrow streets, congested junction, unorganized parking etc. which creates hindrance to the smooth flow of traffic. Most of the bridges and major corridors are no longer able to cope up with even the present traffic demand. High travel time and congestions have created an adverse effect on the economic and environmental health of this city. [4]

The share of two wheelers in total road accidents has increased from 28.8 per cent in 2015 to 33.8 per cent in 2016.Out of total of 52,500 two wheeler riders killed in road accidents during the calendar year 2016, 10,135 two-wheeler riders (19.3 per cent) were reported to be not wearing helmets. [5]

Motorcycle riders who do not wear a helmet run a much higher risk of sustaining head and traumatic brain injuries. Helmets create an additional layer for the head and thus protect the wearer from some of the more severe forms of traumatic brain injury. In spite of the protective nature of helmets, and the impact of traumatic brain injury for motorcycle users, low rate of helmet use in middle and low-income countries is the commonly observed phenomena. [6]

During a motorcycle crash, the rider is thrown forwards / backwards or falls to the side hitting an object depending on collision patterns. When a rider's head hits an object, the forward motion of the head is stopped but the brain continues to move until it strikes the inside of the skull. It then rebounds hitting the opposite side of the skull. The resulting damage can vary from minor head injuries to instantaneous death depending on the amount of energy transferred to the injured person in a crash. If the rider is unprotected, the amount of energy transfer will be much higher and injuries are severe.

Even though Karnataka Government enforced mandatory helmet law for riders and pillions in 2016, But two wheeler users are not following the rules and they will give many reasons to non-usage of helmet.

OBJECTIVE OF THE STUDY

To explore the characteristics of offenders of helmet law in Bangalore city and reasons for non-usage of helmet among them.

MATERIALS AND METHODS:

(a) Study place: Bangalore, Karnataka, India

(b) Study subjects:

Offenders of helmet law fined by police at selected traffic junctions in Bangalore city

(c) Study Period: 5 months, July 2017 to December 2017

(d) Study design: Cross Sectional

(e) Sampling design: Purposive sampling.

(f) Sample Size:

Totally 231 Offenders of helmet law were interviewed

METHOD OF COLLECTION OF DATA:

Selection of traffic junctions:

Bangalore city has two major traffic divisions such as, East and West. East had twenty traffic divisions and west had twenty three traffic divisions.

Total 4 junctions, two from each division were selected by random sampling method to conduct the road side interview for offenders. i.e. Madivala traffic junction, Wilson garden traffic junction road side area were selected from East division and Anand Rao Circle traffic junction, K R Market traffic junction road side area were selected from West Division.

Interviews of offenders of helmet law:

Totally 231 offenders of helmet law caught and fined by the traffic police were interviewed using pre tested semi structured

questionnaire after informed consent while fined by the police. Information on Demographic variables: Age, Gender, Marital status, Education status, Occupation, Vehicle details (License, ownership of vehicle, type of vehicle, capacity of vehicle), frequency of offences and reasons for not wearing helmet were collected.

Data Analysis:

Data was entered into SPSS version 20, descriptive variables were expressed in frequencies and percentages.

RESULTS

More than 60% of the offenders of helmet law were men and belonged to the 20-45 years age group, majority were graduates and were married (table 1)

Table1: Socio-demographic characteristics of offenders of helmet law in Bangalore city

CHARACTERISTIC	FREQUENCY	PERCENT %
Age group		
15-25	32	13.9
26-35	75	32.5
36-45	86	37.2
46-55	32	13.9
56&above	6	2.6
Gender		
Male	200	86.6
Female	31	13.4
Educational status *		
Illiterate	1	0.4
Primary school	12	5.1
Middle school	15	6.4
High school	17	7.3
Post high school	47	20.3
Graduate	130	56.2
Profession	09	3.8
Occupation		
Unemployed	17	7.3
Unskilled worker	32	13.8
Skilled worker	116	50.2
Professional	66	28.7
Marital status		
Unmarried	44	19.0
Married	184	79.7
Divorced/separated	3	1.3

It was observed that majority of the offenders were riding in the City since a year and aware about the mandatory helmet law and had driving license (Table 2),

Surprisingly More than half of the offenders had committed similar offence more than once (Table 3, Figure 1)

Nearly 60% of the offenders give reasons of discomfort, hindrance in visibility / hearing, hair loss/alters their hair style as reasons for non-usage of helmet (Table 4 Figure 2)

Majority of participants responded that wearing of helmet was necessary only of police were monitoring and less than ten percent of participants perceived that helmet was required for the personal protection (Table 5).

More than half of the offenders opined that helmet was not required for riding short distance (Table 6).

Table 2: Driving licence status and other characteristics of offenders in Bangalore

Category	Frequency	Percent %
Driving licence issued		
Yes	226	97.8
No	5	2.2
Status of ownership of vehicle		
Owned	201	87.0
Not Owned	30	13.0
Capacity of vehicle		
<100cc	42	18.2
>100cc	189	81.8
Duration of usage two wheeler in Bangalore		
Less than 1 year	8	3.5
More than 1 year	223	96.5

Table 3: Frequency of offences committed among offenders of helmet law

Category	Frequency	Percent %
First time	108	46.7
More than 1 times	123	53.3

Table 4: Reasons for non-usage of helmet among offenders in Bangalore

Category	Frequency	Percent %
Not necessary	14	6.1
Police will not catch	28	12.1
Hinders visibility/ hearing	88	38.1
Hair loss / alters hair style	69	29.9
Discomfort to wear	32	13.8

Table 5: Responses of the offenders on "when they should wear the helmet"

Category	Frequency	Percent %
For high speed riding	86	37.2
When police is monitoring	135	58.4
For personal protection	9	3.9
Always	1	0.4

Table 6: Responses of the offenders on 'when they do not feel the need of helmet'

Category	Frequency	Percent %
When riding for a short trip	88	38.1
When I don't anticipate meeting a policeman	18	7.8
During the hot weather	42	18.2
Weekends/party/attending a function/nighttime	83	35.9

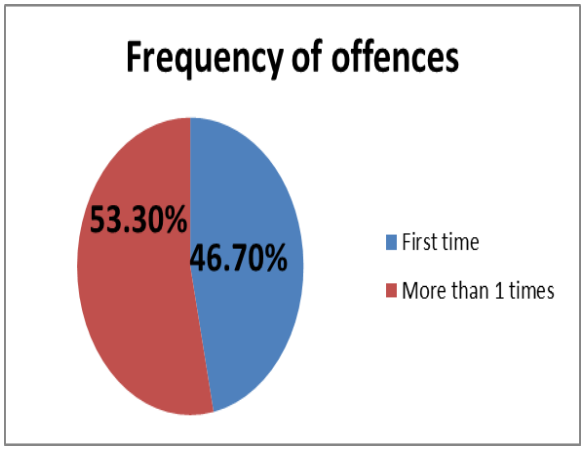

Figure 1: Frequency of offences committed by offenders of helmet law

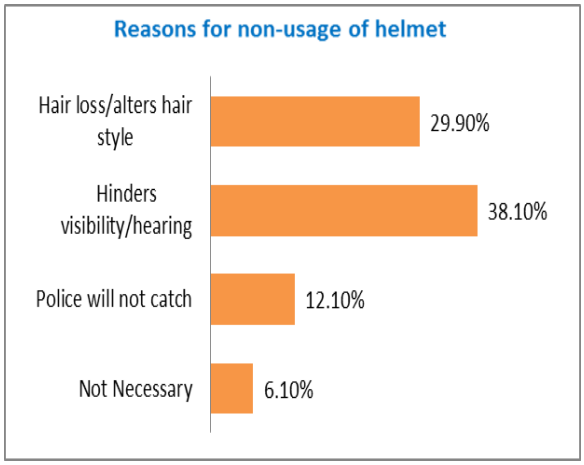

Figure 2: Reasons for Non-usage of helmet

DISCUSSION

On 1st January 2016 Karnataka state Government made Gazette notification that Karnataka motor vehicles, Rules 1989, in rule 230, for sub rule; [1] every person while driving or riding (both for rider and pillion riders) a motor cycle of any type i.e. to say motor cycles, scooters and mopeds irrespective of brake horse power of the vehicle within the limits of Karnataka state shall wear protective headgear (Helmet) [7] Compulsory helmet law was enforced in Bangalore (2016) for riders and pillions. Inspite of the mandatory helmet law our study showed that 20 % of people do not adhere to the law. Hence current study aimed to understand the characteristics of such offenders by interviewing them, which helps to strengthen the safety rules by knowing the offenders better.

In the reasons for non-usage of helmets, majority of the offenders opined that hinders their visibility and were due to hair loss/alters hair style and discomfort to wear helmet are the reasons. A study conducted at Democratic republic found that indicated that they did not like how a helmet feels or how it makes them look. And the helmets were not necessary for safety reason. [8] A study conducted in Southeast Asian countries found discomfort wear helmet was one of the reasons for non-usage of helmets. [9] A study conducted at California, it has been evident that helmet use is less likely during hot weather and more likely during winter respectively. [10]

A study conducted in Pakistan found that physical discomfort, decreased vision and inability to hear are the reasons for not wearing helmets. [11] A study conducted at Iran found that feeling heat during helmet use, lack of sufficient sight, limiting the hearing of the rider are reasons for not using helmets. [12] A study conducted at Nigeria found that uncomfortable to wear helmet, obstruct riders view and impair hearing are the reasons. [13]

In our study more than half of the offenders perceived that helmet was required for the purpose of law. a similar study conducted at Thailand found the same perception for wearing of helmet. [14]

Majority of the offenders responded that while riding for a short distance not necessary to wear helmet, a similar study conducted in Southeast Asian countries found same reasons for non-usage of helmet. [9] Nearly half of the offenders felt that helmet wearing was not needed during weekends and night. A similar study was conducted at Thailand found that given same reasons. [14]

CONCLUSION

Most of the offenders of helmet law were men and were frequent offenders. Majority of the offenders perceived that helmet wearing was necessary for law than for self protection. Loss of hair and discomfort were the common reasons for non-usage.

Recommendations

There is a need to strengthen legal enforcement of helmet along with education campaigns to foster positive attitude towards helmet use.

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