International Journal of Community Medicine and Public Health
Shetty SK et al. Int J Community Med Public Health. 2017 Oct;4(10):3796-3801
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20174253

Original Research Article

Awareness and obeyance of road traffic rules among motorists in Mangaluru suburbs, India

Sudeep Kumar Shetty, Mackwin Kenwood D'mello*, Jagannath Purushothama, Priyanka Dsouza Rent, V. Monisha

Department of the Public Health, K. S. Hegde Medical Academy, Nitte University, Mangaluru, Karnataka, India

Received: 03 August 2017
Revised: 29 August 2017
Accepted: 02 September 2017

***Correspondence:**
Mr. Mackwin D'mello,
E-mail: mackwin@nitte.edu.in

ABSTRACT

Background: Road traffic accident is one amongst the "biggest killers" across the World according to World Health Organization. Though road traffic accidents are both predictable and preventable, it is witnessed that there is an alarming increase in morbidity, mortality and disability owing to road traffic accident which has become a major public health concern in India. Hence this study aims to assess the awareness and obeyance of road traffic rules among commuters in south Mangaluru suburbs.
Methods: A cross sectional study was conducted among 180 motorists in south Mangaluru suburbs during August 2015, who were selected conveniently and structured questionnaire was administered for interview schedule. The data were analyzed for mean, median, frequencies, percentages, standard deviation and appropriate statistical tests were applied by using SPSS version 16.
Results: More than two-thirds (67.2%) had insufficient awareness about road traffic rules and more than three fourth of the respondents (86.1%) had bad obeyance of road traffic rules. There was relationship between awareness and practice which was statistically significant (p=0.041) and there was statistical significant difference (p<0.05) in obeyance according to marital status, profession and type of vehicles used.
Conclusions: Though the respondents were aware about road traffic rules to a certain extent but they were not obeying the road traffic rules wholly. This can be addressed through the strict enforcement of road traffic rules and behavioral change communications.

Keywords: Awareness, Obeyance, Road traffic rules, Motorists

INTRODUCTION

Road traffic accidents are one amongst the "biggest killers" across the world, according to the first Global status report on road safety, World Health Organization (WHO).[1] More than 1.25 million people die each year on the roads and most of these deaths are occurring in low and middle income countries. According to global status report on road safety 2015, road traffic accident is a development issue for low and middle income countries as it lose approximately 3% of GDP.[2]

Although India has only 1% of the world's vehicles, it accounts for 6% of the world's road traffic accidents. The road traffic accident rate is 35 per 1000 vehicles and road traffic accident fatality rate is 25.3 per 10000 vehicles in India.[3] According to National Crime Records Bureau (NCRB) 2014, 450,898 road traffic accidents have caused 141,526 deaths in India.[4] It is reported that 7% of India's Road Traffic Accident deaths are occurring in Karnataka.[4] In Dakshina Kannada, 1,149 road traffic accident cases in the district have been reported in five months between April to August, 2013 as per District hospital report.[5]

Evidences have shown that rapid economic growth has been accompanied by increased motorization and road traffic injuries.[2] Though road traffic accidents are both predictable and preventable, we are still witnessing an increase in morbidity, mortality and disability due to Road Traffic Accident which has become a major public health concern in India.

The major arterial road connecting Mangaluru city with rapidly developed zone in Southern suburb harbours major academic institutions and IT industries, but the considered to be a major accident prone locations in the city. The awareness and obeyance of road traffic rules are important to determine the road traffic safety, hence this study aims to assess the awareness and obeyance of road traffic rules among commuters in South Mangaluru suburbs.

METHODS

This cross sectional study was conducted among 180 commuters who were motoring either a two wheeler or a four wheeler vehicles in Thokottu- Konaje area of South Mangaluru, Dakshina Kannada District in August, 2015.

The commuters aged above 18 years were selected by convenient sampling technique and the interview schedule was administered using pretested, structured questionnaire which consisted of socio- demographic, socio-economic, awareness and obeyance variables, after taking informed written consent by trained interviewers at different junctions of Thokottu- Konaje area of South Mangaluru, Karnataka, India. The content of the questionnaire was developed using information from various literature.

The respondents who said driving license, certificate of taxation, certificate of insurance of the vehicle and emission test certificate are the documents to be carried while driving were considered as correct answer. The respondents who said >₹200 was the penalty for driving without driving license was considered as correct answer. The respondents who said "red" for stop, "yellow" for get ready and "green" for proceed/go were considered as correct answer about traffic signals. The respondents who said punishment by law for drunken driving was imprisonment which may extent to 6 months or ₹2000/- as penalty or both were considered as correct answer. The respondents who said five meters were the minimum distance to be kept from the vehicle in front was considered as correct answer. The respondents who said <24 km/hour is the maximum speed permitted for vehicles towing another vehicle and speed limit to be maintained where men are engaged in road repairs were considered as correct answer. The respondents who said 18 years was the minimum age for obtaining the driving license was considered as correct answer.

In this study, the following answers given by the respondents for respective questions pertaining to obeyance was considered as correct answer, for safety measures, those who said both seat belt and helmet; for zebra crossing, those who slow down, sound horn and pass; to overtake, those who indicate lights on right side; those who doesn't horn near schools and hospitals; those who gives way to ambulance and fire service; those who make a U-turn after checking whether there are no signs or road markings prohibiting a U-turn and makes U-turn in the area provided for that purpose; those who proceed slowly and cautiously in school bus pickup or drop area and those who carry victim to nearest hospital, inform police within 24 hrs in case of any motor vehicle involved in accident.

The data entry and cleaning was done manually in Microsoft excel, later the entire data was exported to SPSS 16.0 version. The data was summarised using descriptive statistics such as frequency, percentage (%), mean, median, standard deviation (S.D). Pearson correlation was used, to assess the relationship between awareness and obeyance where Pearson correlation coefficient (r) and p value were obtained. Chi-square or likelihood ratio was used accordingly to assess the relationship between obeyance and socio-demographic variables.

In this study, awareness referred to determine the extent to which the commuters' understanding about key road traffic rules and regulations and obeyance referred to determine the extent of obeying road traffic rules and regulations by the commuters.

To assess the awareness and obeyance, each correct answer was scored as one and for incorrect answer was scored as zero for questions pertaining to awareness and obeyance. The total score of awareness and obeyance was obtained by computing all the related variables, the obtained total scores was categorized into two categories by using the median value, which was considered as cut off value. The score below cut off value was coded as insufficient awareness and bad obeyance, while the score above cut off value was coded as sufficient awareness and good obeyance.

RESULTS

Socio-demographic characteristics

The mean age of the respondents reported in this study was 26.57±4.93 years and majority of the respondents (35.6%) were reported to be aged between 23-27 years, followed by aged between 18-22 years (23.9%). More than three-fourth of the respondents (86.1%) were males and more than half of the respondents (56.7%) were unmarried. In this study, more than one third of the respondents (38.3%) had under graduation level of education, followed by high school level of education (33.3%), post-graduation level of education (12.2%), secondary level of education (11.1%) and up to primary level of education (5.1%). Half of the respondents (51.1%) were students, followed by institutional drivers (37.8%), business (6.1%) and service (5%).

All the respondents (100%) had driving license and majority (43.9%) of them had only four wheeler vehicle followed by only two wheeler vehicles (42.2%) and 13.9% of the respondents had both two wheeler as well as four wheeler vehicles.

Awareness regarding road traffic rules and regulations

Most of the respondents (97.2%) knew the complete documents required to carry while driving. About two-third of the respondents (66.1%) said the fine for driving without driving license was >₹200. More than two-third the respondents (67.8%) said red colour in traffic signal indicates for stop, yellow for get ready and green for go. Half of the respondents said punishment by law for drunken driving was imprisonment which may extent to 1 year or fine up to ₹4000/- or both. More than one fourth of the respondents (39.4%) said 5 meters was the minimum distance to be kept from the vehicle in front. More than half of the respondents (68.3%) said <24 km/hour was the maximum speed permitted for vehicles towing another vehicle. More than three fourth of the respondents (91.7%) said 18 years was the minimum age for obtaining the driving license. More than half of the respondents (65.6%) did not know the speed limit to be maintained where men were engaged in road repairs (Table 1).

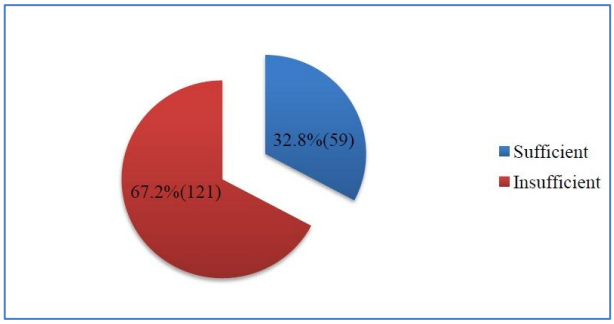

Figure 1: Level of awareness regarding road traffic rules among respondents.

Level of awareness regarding road traffic rules among respondents

The mean awareness level among the respondents was 5.1±1.12 with median or cut off value 5. We found that more than half of the respondents (67.2%) had insufficient awareness (Figure 1).

Table 1: Awareness regarding road traffic rules and regulations.

Variables	Frequency (%)
Documents to be carried	
Driving license, certificate of taxation, certificate of insurance of the vehicle, emission test	175 (97.2)
Driving license, certificate of insurance of the vehicle	5 (2.8)
Fine for driving without driving license	
<₹200	11 (6.1)
₹200	50 (27.8)
>₹200	119 (66.1)
Traffic signal colours	
Red colour in traffic signal indicates for stop, yellow for get ready and green for proceed/go	122 (67.8)
Red colour in traffic signal indicates for stop, yellow for proceed and green for proceed/go	58 (32.2)
Punishment for drunken driving	
Imprisonment which may extent to 1 year or fine up to ₹4000/- or both	93 (51.7)
Imprisonment which may extent to 6 months or ₹2000/- as fine or both	81 (45)
License cancelled	6 (3.3)
Minimum distance to be kept from the vehicle in front	
1 to 4 meters	51 (28.3)
5 meters	71 (39.4)
More than five meters	58 (32.2)
Maximum speed permitted for vehicles towing another vehicle	
Less than 24 km/hour	123 (68.3)
Exact 24 km/hour	46 (25.6)
More than 24 km/hour	11 (6.1)
Minimum age for obtaining the driving license	
18 years	165 (91.7)
Other than 18 years	15 (8.3)
Speed limit to be maintained where men are engaged in road repairs	
Less than 24 km/hour	62 (34.4)
Don't know	118 (65.6)

Table 2: Obeyance of road traffic rules and regulations.

Variables	Frequency (%)
Safety measures	
Helmet only	58 (32.2)
Seatbelt only	49 (27.2
Both helmet and seatbelt	71 (39.4)
Helmet, Seat belt with vehicle condition	2 (1.1)
Zebra line	
Sound horn and proceed	20 (11.1)
Slow down, sound horn and proceed	158 (87.8)
Stop the vehicle and wait till pedestrians cross the road and then proceed	2 (1.1)
Overtake	
Horn with lights in left side	4 (2.2)
Horn with lights in right side	108 (60)
Lights with left side	26 (14.4)
Lights with right side	41 (22.8)
Horn with right side	1 (0.6)
No horn	
Hospitals, educational institution	180 (100)
Vehicle given way	
Police vehicle with siren	12 (6.7)
Ambulance and fire service	163 (90.6)
Only police vehicle	3 (1.7)
All the above	2 (1)
U turn	
checks whether there are no signs or road markings prohibiting a U-turn and makes U-turn in the area provided for that purpose	90 (50)
Wherever there is a way	90 (50)
Motor vehicle involved in accident	
Take photo, carry victim to nearest hospital, inform police within 24 hrs	57 (31.7)
Carry victim to nearest hospital, inform police within 24 hrs	116 (64.4)
No special care	7 (3.9)
School bus pickup or drop	
Blow horn and proceed	11 (6.1)
Proceed slowly & cautiously	168 (93.3)
No special care	1 (0.6)

Obeyance of road traffic rules and regulations

More than two-third of the respondents (39.4%) said helmet and seatbelt were the safety measures they used. More than three fourth of the respondents (87.8%) said they slow down, sound horn and proceed near zebra crossing. More than half of the respondents (60%) said they horn with lights in right side while overtaking. All the respondents don't horn near hospitals and educational institutions. More than three fourth of the respondents (90.6%) said they gave way to ambulance and fire service vehicles. Half of the respondents (50%) said they make a U-turn wherever there is a way. More than half of the respondents (64.4%) said in case of accident they carry victim to nearest hospital and inform police within 24hours. More than three fourth of the respondents (93.3%) said they proceed slowly & cautiously in school bus drop or pickup area (Table 2).

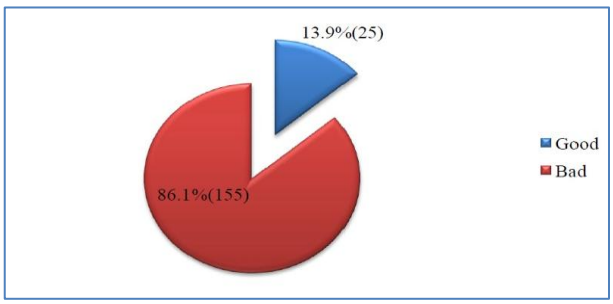

Figure 2: Level of obeyance regarding road traffic rules among respondents.

Level of obeyance regarding road traffic rules among respondents

The mean obeyance level among the respondents was 5.5±0.99 with median or cut off value 6. We found that

more than three fourth of the respondents (86.1%) had bad obeyance (Figure 2).

Relationship between awareness and obeyance

Pearson correlation was used to assess the relationship between awareness and obeyance and we found that there was relationship between awareness and practice which was statistically significant with p value 0.041 and Pearson correlation coefficient value (r) was 0.152.

Relationship between obeyance and socio-demographic variables

Chi-square or likelihood ratio was used accordingly to assess the relationship between obeyance and socio-demographic variables, we found that there was statistical significant difference in obeyance according to marital status ($p \leq 0.001$), profession ($p=0.02$) and type of vehicles used ($p=0.05$).

DISCUSSION

This cross sectional study was conducted to assess the awareness and obeyance of road traffic rules among commuters in South Mangaluru suburbs. The findings of this study revealed that more than half of the respondents had insufficient awareness about road traffic rules and more than three fourth of the respondents had bad obeyance of road traffic rules.

In this study all the respondents had driving license and this is because all the respondents were commuters and above the legal age (18 years). This finding was consistent in the result found in study from Saudi Arabia.[6] In this study we found that half of the respondents (51.1%) were students and it could be because of the study area, where there are three universities and four medical institutions.

In this study it was reported that majority of the respondents were aware about the documents required while driving. Similar results were found in the study from India, where it reported that 66% of the respondents were aware about the documents to be carried.[7]

In this study it was reported that majority of the respondents (67.8%) were aware about the traffic signal colours which was consistent in findings found in the study from India, which reported that the majority of the respondents (63.5%) were aware about traffic signal colours after the intervention.[8]

In this present study, we found that majority of the respondents had insufficient awareness regarding road traffic rules and regulations; similar results were found from study done in India where it reported that the majority of the respondents (55%) gave incorrect answers.[9]

This study reported that all the respondents don't horn near educational institution as well as hospitals, while the study from Iran reported that 92.5% of the respondents don't horn in restricted areas.[10]

Though the respondents were aware about road traffic rules to a certain extent but they were not obeying the road traffic rules wholly. This can be addressed through the strict enforcement of road traffic rules. Further similar research is recommended among various suburbs.

ACKNOWLEDGEMENTS

We are thankful to Abinash Upadhaya, Ganesh Narayan Shreshta, Harsha Raj Dahal, Jeena B P, Kordor Lyngdoh, Krishna Khadka, Raju Ghimire and Sanjeev Shah for their support in data collection.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Road Safety in India, Airbag, Seat Belt. Scribd. Available at: https://www.scribd.com/document/113087419/Road-Safety-in-India. Accessed on 3 June 2017.
2. WHO. Global status report on road safety 2015. WHO. Available at: http://www.who.int/violence_injury_prevention/road_safety_status/2015/en/. Accessed on 2 July 2017.
3. Epidemiology of Road Traffic Accidents in India: a Review of Literature, 2011. Available at: http://www.youthforroadsafety.org/uploads/nieuws_bijlagen/rta_report.pdf. Accessed on 9 June 2017.
4. National Crime Records Bureau (NCRB). Accidental Deaths and Suicides in India, Ministry of Home Affairs, Government of India, New Delhi, 2014. Available at: http://ncrb.nic.in/Stat-Publications/ADSI/ADSI2014/adsi-2014%20full%20report.pdf. Accessed on 3 June 2017.
5. Dakshina Kannada - PIP Report.doc. Available at: https://nrhm-mis.nic.in/Part%20B%20Demographic%20and%20Vital%20Indicators/PIP%20Monitoring%20of%20various%20districts%20during%202013-14/Districts%20PIP%20Report%202013-14/Karnataka/Dakshina%20Kannada%20-%20PIP%20Report.doc. Accessed on 3 June 2017.
6. AlZahrani A, Ahmed E. Knowledge and attitude toward road traffic regulations among students of Health Sciences College in Taif Region, KSA. Int J Med Sci Public Health. 2014;4(2):241-4.
7. Chakrabarty N, Gupta K, Bhatnagar A. A Survey on Awareness of Traffic Safety among Drivers in Delhi, India. Stand Int J. 2013;1(2):106–10.
8. Mahawar P, Dixit S, Khatri AK, Rokade R, Bhurre R, Kirar S, et al. An education intervention to improve awareness on road safety: A study among

school going teenagers in Indore. Natl J Community Med. 2013;4(3):529–32.
9. Ogale RJ, Naikare VR. Knowledge about traffic Signs among adolescents. Sinhgad EJ Nurs. 2013;3(2):40–1.
10. Tajvar A, Yekaninejad MS, Aghamolaei T, Shahraki SH, Madani A, Omidi L. Knowledge, attitudes, and practice of drivers towards traffic regulations in Bandar-Abbas, Iran. Electron Physician. 2015;7(8):1566–74.

Cite this article as: Shetty SK, D'mello MK, Purushothama J, Rent PD, Monisha V. Awareness and obeyance of road traffic rules among motorists in Mangaluru suburbs, India. Int J Community Med Public Health 2017;4:3796-801.