

Original Research Article

Awareness and behaviour patterns regarding road safety measures among undergraduate students

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ABSTRACT

Background: In most regions of the world the global epidemic of traffic injuries is still increasing. In India motor vehicle population is growing at a faster rate than the economic and population growth. It has been estimated that unless immediate action is taken, road deaths will rise to the fifth leading cause of deaths by 2020. The present study was aimed to assess the level of awareness regarding road safety among the study participants and to study the behavior patterns while using motorized vehicles among the study participants.

Methods: The present cross-sectional study was conducted in Sri Siddhartha Dental College, Tumkur. All Undergraduate students were included in the study. A total of 200 students were studied. They all drive either their own vehicles or others' vehicles. They were aged from 17-27 years. The study period was from October 2016 to November 2016.

Results: In total, 200 dental students were studied, ranging from 1st to final year BDS of age 17-27 years; the mean age being 21.67 and standard deviation of 3.170. Only 148(74%) wear helmet and only 61(30.5%) interpreted Gap-In-Median correct.

Conclusions: The awareness regarding road safety measures among the study participants was satisfactory but interpretation of traffic signs was poor-only 30.5% interpreted gap-in-median correct. The behavioral patterns among dental students are not satisfactory-only 74% of students wear helmet while riding, only 81.5% wear seat belts and 23.5% don't follow lane rules while driving.

Keywords: Road safety measures, Undergraduate students, Awareness, Behavioral patterns

INTRODUCTION

In most regions of the world the global epidemic of traffic injuries is still increasing.¹ In India motor vehicle population is growing at a faster rate than the economic and population growth.² It has been estimated that unless immediate action is taken, road deaths will rise to the fifth leading cause of deaths by 2030. It may result in an estimated 2.4 million fatalities per year. Half of all road

traffic deaths are among pedestrians, cyclists and motor-cyclists, and adults aged between 15 and 44 years account for 59% of deaths.³

It has been estimated that unless immediate action is taken, road deaths will rise to the fifth leading cause of deaths by 2020.⁴ Road Traffic Accidents (RTAs) are the leading cause of death among individuals aged 15 to 29 and second leading cause of mortality among 20-24 years

of age.¹ Simple measures such as awareness and practice of road safety measures can effectively reduce the impact of RTAs on the people's lives.

Road traffic accidents are considered as one of the important public health problems around the world.⁵ The problem of RTAs is compounded by the fact that, the age groups primarily involved in RTAs belong to the most productive age group of 15-40 years. Developing countries, such as India face the double burden of already existent communicable diseases and increasing burden of non-communicable diseases including RTAs.⁶ The present study was aimed to assess the level of awareness regarding road safety among the study participants and to study the behavior patterns while using motorized vehicles among the study participants.

METHODS

The present cross-sectional study was conducted in Sri Siddhartha Dental College, Tumkur. All Undergraduate students were included in the study. A total of 200 students were studied. They all drive either their own vehicles or others' vehicles. They were aged from 17-27 years. The study period was from October 2016 to November 2016.

A Pretested semi-structured Questionnaire including general information and specific questions regarding awareness and behavioral patterns about road safety measures was given to the study participants and were instructed to fill them and filled Questionnaire were obtained from the participants. After obtaining, data was entered in excel spreadsheet and was analyzed using SPSS software and frequencies and percentages were obtained and chi square test was applied.

RESULTS

In total, 200 dental students were studied, ranging from 1st to final year BDS of age 17-27years; the mean age being 21.67 and standard deviation of 3.170.

Out of 200 participants, 84 (42%) belong to <20 years and 116 (58%) belong to >20 years; 107 (53.5%) were male and 93 (46.5%) were females; 24 (12%) belong to 1st year, 76 (38%) belong to 2nd year, 31 (15.5%) belong to 3rd year and 69 (34.5%) belong to final year; 134 (67%) stay in the Hostel and 66 (33%) were Day scholars as given in Table 1.

Out of 200 participants, 109 (54.5%) have attended programs regarding road safety measures, 148(74%) wear helmet while riding, 173 (86.5%) overtake vehicles from right side, only 163 (81.5%) wear seat belt while driving, 162 (81%) don't use mobile phone while driving &164 (82%) follow speed limits mentioned on signboards as shown in Table 2.

Table 1: Sociodemographic profile of study participants.

Variables	Frequency	Percentage (%)
Age (in years)	≤20	84
	>21	116
Sex	Male	107
	Female	93
Year of Education	1 st year	24
	2 nd year	76
	3 rd year	31
	4 th year	69
Residence	Hostel	134
	Day scholar	66
Total	200	100

Table 2: Awareness regarding road safety measures while using vehicles.

Recommended road safety measures	Frequency	Percentage (%)
Attended any programs regarding road safety measures	109	54.5
Wearing helmet	148	74
Overtaking vehicles only from right side	173	86.5
Wearing seat belt while driving	163	81.5
Do not use mobile phone while driving	162	81
Follow speed limit mentioned on signboards	164	82

Table 3: Behavioural patterns of study participants.

Behavioural patterns	Frequency	Percentage (%)
Having a driving license	142	71
Do not wear helmet while riding	52	26
Driving after consuming alcohol	24	12
Exceeding speed limits while driving	24	12
Using mobile phones while driving	28	14
Do not wear seat belts while driving	37	18.5
Caught by police for drink & drive and over speeding	22	11
Do not follow lane rules while driving	47	23.5

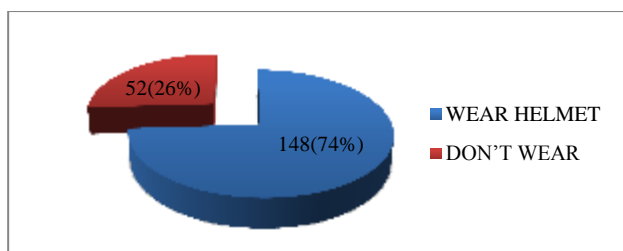


Figure 1: Wearing helmet while riding.

Out of 200 participants, 142 (71%) had driving license, 52 (26%) don't wear helmet while riding, 24 (12%) drive vehicles after consuming alcohol, 24 (12%) exceed the speed limits while driving, 28 (14%) use mobile phones while driving, 37 (18.5%) do not wear seat belts while driving, 22 (11%) were caught by police for drink & drive and over speeding & 47 (23.5%) do not follow lane rules while driving as in Table 3.

Table 4: Association between behavioural patterns and gender.

Variables	Response	Gender, N(%)		Total	P value
		Male	Female		
Drunken driving	Yes	20(18.7%)	4(4.3%)	24(12%)	0.002
	No	87(81.3%)	89(95.7%)	176(88%)	
Use of helmet while riding	Yes	79(73.8%)	69(74.2%)	148(74%)	0.954
	No	28(26.2%)	24(25.8%)	52(26%)	
Use of seat belt while driving	Yes	92(86%)	71(76.3%)	163(81.5%)	0.080
	No	15(14%)	22(23.7%)	37(18.5%)	
Use of mobile phone while driving	Yes	24(22.4%)	4(4.3%)	28(14%)	<0.001
	No	83(77.6%)	89(95.7%)	172(86%)	
Exceeding speed limit	Yes	80(74.8%)	74(79.6%)	154(77%)	0.421
	No	27(25.2%)	19(20.4%)	46(23%)	
Total		107	93	200	

Table 5: Association between behavioural patterns and age.

Variables	Response	Gender, N (%)		Total	P value
		≤20 Years	>21 Years		
Drunken driving	Yes	2(2.4%)	22(19%)	24(12%)	<0.001
	No	82(97.6%)	94(81%)	176(88%)	
Use of helmet while riding	Yes	67(79.8%)	81(69.8%)	148(74%)	0.114
	No	17(20.2%)	35(30.2%)	52(26%)	
Use of seat belt while driving	Yes	66(78.6%)	97(83.6%)	163(81.5%)	0.364
	No	18(21.4%)	19(16.4%)	37(18.5%)	
Use of mobile phone while driving	Yes	5(6%)	23(19.8%)	28(14%)	0.005
	No	79(94%)	93(80.2%)	172(86%)	
Exceeding speed limit	Yes	69(82.1%)	85(73.3%)	154(77%)	0.141
	No	15(17.9%)	31(26.7%)	46(23%)	
Total		84	116	200	

Table 6: Sign boards interpretation by study participants.

Traffic sign boards	Interpretation of sign	Frequency	Percentage (%)
	No entry	163	81.5
	No overtaking	185	92.5
	No U-turn	196	98
	Pedestrian crossing	190	95
	Inclination ahead	172	86
	Gap in median	61	30.5

Only 148(74%) wear helmet and 52(26%) don't wear helmet as depicted in Figure 1. There was significant association between gender and consumption of alcohol and mobile phone usage while driving as in Table 4 and also significant association was found between age and alcohol consumption while driving and mobile phone usage while driving as given in Table 5.

Out of 200 participants, interpretation of signboards was done right by 163 (81.5%) for no entry, 185 (92.5%) for no overtaking, 196 (98%) for no u-turn, 190 (95%) for pedestrian crossing, 172 (86%) for inclination ahead & only 61(30.5%) for gap in median as in Table 6.

Out of 200 participants, only 61(30.5%) interpreted gap-in-median correct and 139 (69.5%) interpreted it wrong as shown in Figure 2.

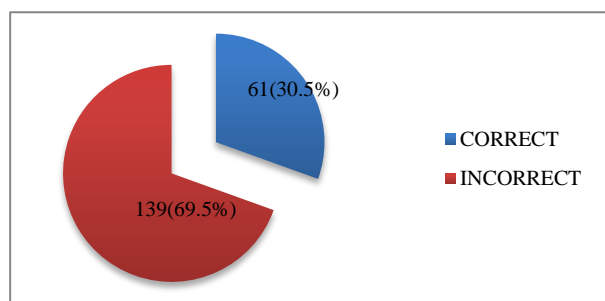


Figure 2: Interpretation of gap-in-median.

DISCUSSION

Road traffic accidents (RTA's) are the result of many factors related to bike, car, driver and the nature of the road. Though the bike, car and road contribute to some extent, driver errors remain the most significant factor in increasing or decreasing the rate of RTAs.⁵ The present study was conducted to assess the awareness and behavior patterns regarding road safety measures among under graduate dental students. The mean age of the study participants was 21.67 and Majority of the participants were males. A Study in reported that 67.3% were males and 32.7% were females.^{3,7} Table 1 outlines the socio-demographic profile of the study participants.

Awareness of road safety measures among the participants was good. This may be due to the increase in campaigning through mass media. But only 173 (86.5%) know that overtaking must be from right side only. This may be due less addressing of this issue in comparison to the other measures. In the interpretation of traffic signs, the knowledge of the participants was not satisfactory. Only 61 (31.5%) interpreted gap-in-median correct. Similar finding was observed by Gharaibeh et al in a study conducted in Saudi Arabia.^{1,8}

Regarding the behavioural patterns, nearly 29% of the participants were not having a driving license. 26% of the

study participants don't wear helmet and 12% were involved in drunken driving. Our findings were similar to the observation in the study conducted by Swamy et al in Chandigarh.⁹ Use of seatbelts was one of the most cost effective way to prevent RTA related morbidity and mortality.^{10, 11}

Twenty eight (28) participants admitted that they used mobile phones without hands free devices while driving. Furthermore, nearly 12% participants agreed to having exceeded speed limits while driving. Almost similar findings were reported by Kulkarni et al from South India.¹² Janlert et al also reported 14% of the riders who met accident had drunken driving.¹³

The behaviors concerning mobile usage and over-speeding while driving are highly dangerous to the driver and to the public. Hence, these behavior patterns need to be addressed through proper legislative and educative measures. Practices relating to road safety should be encouraged to reduce the morbidity and mortality related to road traffic accidents

CONCLUSION

The awareness regarding road safety measures among the study participants was satisfactory but interpretation of traffic signs was poor-only 30.5% interpreted gap-in-median correct. The behavioral patterns among dental students are not satisfactory-only 74% of students wear helmet while riding, only 81.5% wear seat belts and 23.5% don't follow lane rules while driving. The efforts for increasing road safety measures through signboards, posters and mass media should be strengthened to reduce the morbidity and mortality in relation to road traffic accidents.

Further research in this area needs to be conducted to assess the existing situation regarding road safety measures across various sub-groups of populations. Awareness generation and orientation towards road safety issues among the students should be done through periodic trainings. Strict enforcement of laws and periodic organization of traffic awareness campaigns are essential for checking out risky practices in driving and thereby can result in decreasing the burden of road traffic accidents.

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