Research Article

A study to assess knowledge, attitude, and practices regarding road safety among college students in Goa

Jagadish Anil Cacodcar, Akshaya Vinayak Naik

Department of Preventive and Social Medicine, Goa Medical College, Bambolim, Goa, India

Correspondence to: Akshaya Vinayak Naik, E-mail: naikakshaya3@gmail.com

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ABSTRACT

Background: Road traffic accidents (RTAs) constitute leading cause of death among adolescents as well as young adults making it an important public health problem. Road traffic injuries are now the leading killer among people aged 5–29 years. Annually, roughly 400,000 youngsters under 25 years age succumb to death in a road traffic crash accounting to about 1049 youngsters every day. Knowing the rules and regulations regarding road safety forms an important aspect in preventing RTAs. **Objective:** This study aimed at assessing the knowledge, attitudes, and practices regarding road safety among college students. **Materials and Methods:** A cross-sectional study was conducted among 428 college students from B. Com, M. Com, BCA, BBA, and BA studying at Rosary College of Commerce and Arts, Navelim, Salcete, South Goa, using a pre-designed questionnaire to assess the awareness and practices regarding road safety. Sampling was done using census method. **Results:** Majority of the students were aged 20 years with female preponderance. Overall knowledge and attitude regarding road safety was good, however, it was seen that it was not well practiced. There was a statistically significant difference found between gender and some variables such as compulsory use of seatbelt and helmet, use of mobile phones while driving, and having a valid license for driving. The most common reasons for RTAs cited by the study participants were bad roads (45.4%), overspeeding (21.3%), and overtaking (19.4%). **Conclusions:** Bringing about behavior change regarding road safety measures through information, education, and communication activities and improving legislative measures of traffic rules will contribute in making people responsible citizens of the country which will eventually bring reduction in the sufferings and death due to RTAs.

KEY WORDS: Road Traffic Accidents; Young Adults; Information; Education and Communication Activities

INTRODUCTION

Road traffic accidents (RTAs) constitute one of the leading causes of death among adolescents as well as young adults making it an important public health problem. Nearly 3700 people die daily and tens of millions of people are injured or disabled every year.[1] Children, pedestrians, cyclists, and older people are among the most vulnerable population succumbing to the vehicular accidents.[2] The Global Status Report on Road Safety 2018, released by the World Health Organization in December 2018, highlights the fact that deaths due to vehicular accidents have reached 1.35 million and road traffic injuries are now the leading killer of people aged 5–29 years[3] Every year, roughly 400,000 youngsters under 25 years age die in a road traffic crash accounting to about 1049 youngsters every day.[4] In 2010, a United Nations General Assembly resolution proclaimed a "Decade of Action for Road Safety (2011–2020)." It aimed at saving millions of lives by improving the safety of roads and vehicles; enhancing the behavior of road users; and improving emergency services. The five pillars for focus during the Decade of Action for Road Safety 2011–2020 are road safety management, infrastructure, safe vehicles, road user behavior, and post-crash response.[5]

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Males are more prone to the RTAs as compared to females. As per the literature, nearly 73% of all road traffic deaths occur among young males who are almost 3 times as likely to be killed in a road traffic crash as young females. About 93% of the world's fatalities on the roads occur in developing countries. However, not all accidents end up in fatal injury. Some people suffer less serious injuries, many of whom are left with a temporary or a permanent disability as sequelae of their injury. Road traffic crashes cost most countries 3% of their gross domestic product.[6] It leads to economic losses not only to the individuals and their families but also to the entire nation. These losses include treatment costs as well as lost income for those killed or disabled by their injuries. Eventually, it adds to the economic burden on the family members who need to take care of the injured as well as balance their daily living. Most common reasons which puts an individual at risk include insufficient and improper planning and maintenance of the roads, physical and developmental characteristics of the individuals such as lesser height of children, mental retardation, risk taking behavior, and peer pressure, particularly among adolescents. Other risk factors include high speeding, drink driving, not using helmets, or not wearing seat belts. Knowing the rules and regulations regarding road safety forms an important aspect in preventing RTAs. College students constitute one of the most vulnerable sections of the society. Their aggressive nature and attitude toward experimenting new things poses an additional risk to them when compared to adults. Hence, this study focused on assessing the knowledge, attitudes, and practices regarding road safety among college students.

MATERIALS AND METHODS

Study Area

This study was conducted at Rosary College of Commerce and Arts, Navelim, Salcete, South Goa.

Study Design

This was a cross-sectional study.

Study Participants

Students from B. Com, M. Com, BCA, BBA, and BA.

Inclusion Criteria

All students willing to participate in the study were included in the study.

Exclusion Criteria

The following criteria were excluded from the study:

- Students who were absent
- Students who were not willing to participate in the study.

Sampling Method

Census method.

Study Tool

A pre-designed semi-structured questionnaire was administered to the students to assess the knowledge, attitudes, and practices regarding road safety. Data were entered into Excel sheet and analyzed using SPSS version 22. The data gathered were analyzed using percentages. Chi-square test was applied to find any association, considering $P < 0.05$ as statistically significant.

Permissions

The study was carried out after taking permission from the principal of the college and prior approval was taken from the Institutional Ethics Committee of Goa Medical College.

RESULTS

A total number of study participants were 428. Mean age of the study participants was 19.55 ± 1.073 [Figure 1]. Distribution of the study participants based on gender and the area of residence is summarized in Figures 2 and 3, respectively.

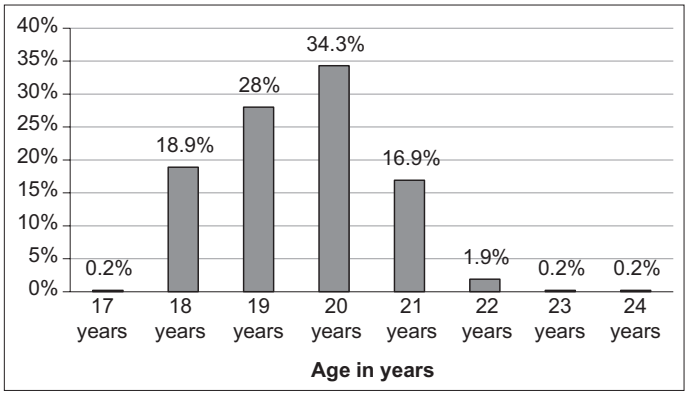

Figure 1: Age-wise distribution of study participants

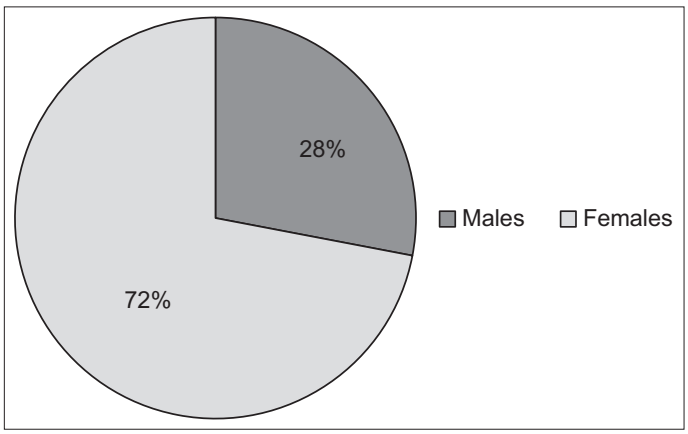

Figure 2: Sex-wise distribution of study participants

Gender-wise distribution of knowledge, attitudes, and practices regarding road safety among study participants is presented in Tables 1-3, respectively. Different reasons for RTAs among the study participants are also depicted in Figure 4.

DISCUSSION

The present study revealed that the overall knowledge regarding road safety was good. Most of the study participants knew the legal age of acquiring license, compulsory use of seatbelts and helmets, ideal side to overtake being right side, and ideal side to walk on the road being left side. The awareness regarding road safety among study participants was also good. There was a statistically significant difference found between gender and some variables such as compulsory use of seat belt (Chi-square value: 7.04, $P = 0.03$) and compulsory use of helmet (Chi-square value: 8.8, $P = 0.01$), suggesting that females had better knowledge as compared to males.

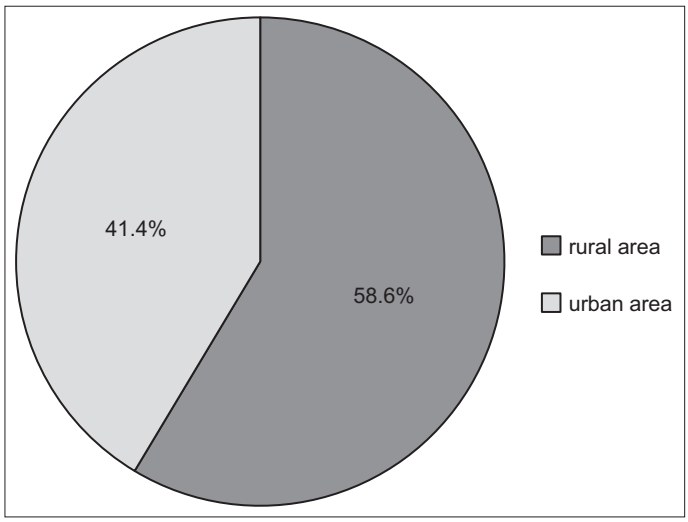

Figure 3: Distribution of study participants based on the area of residence

Majority (77.3%) felt that it is not alright to drive before obtaining driving license, and majority (79.9%) felt that road signs and symbols help in reducing accidents. Most (63.6%) felt that the pillion rider must also use helmet or seat belt. Most of the study participants followed correct practices of road safety. Nearly 50.7% of the study participants used seat belt both on highway and in city. Nearly 42.6% of the study participants used helmet both in the city and on the highway. Around 44.8% of the females had a valid driving license as compared to 22.8% of the males, and this difference was found to be statistically significant (Chi-square value: 16.07, $P \leq 0.001$). About 32.2% of the study participants were riding/driving without a valid driving license. The most common reasons for RTAs cited by the study participants were bad roads (45.4%), overspeeding (21.3%), and overtaking (19.4%). Other less common reported reasons were driving under influence of alcohol, mobile use while driving, etc.

Table 1: Sex-wise distribution of knowledge regarding road safety among study participants

Variables	Male	Female	Total	Statistical test
	No (%)	No (%)	No (%)	
Legal age to acquire license				
<16 years	8 (8.1)	14 (3.2)	22 (5.1)	χ^2=4.7, *P*=0.09
16–18 years	49 (11.4)	99 (23.1)	48 (34.6)	
>18 years	62 (14.4)	196 (45.7)	258 (60.3)	
Compulsory use of seat belt				
Yes	112 (26.1)	302 (70.5)	414 (96.7)	χ^2=7.04, *P*=0.03
No	6 (1.4)	3 (0.7)	9 (2.1)	
Don't know	1 (0.23)	4 (0.93)	5 (1.2)	
Compulsory use of helmet				
Yes	106 (24.7)	298 (69.6)	404 (94.4)	χ^2=8.8, *P*=0.01
No	11 (2.5)	9 (2.1)	20 (1.7)	
Do not know	2 (0.46)	2 (0.46)	4 (9)	
Ideal side to overtake				
Right	108 (25.2)	252 (58.8)	360 (84.1)	χ^2=5.4, *P*=0.83
Left	11 (2.5)	57 (13.3)	68 (15.9)	
Ideal side to walk on the road				
Right	43 (10)	115 (26.8)	158 (36.9)	χ^2=0.04, *P*=0.83
Left	76 (17.7)	194 (45.3)	270 (63.1)	
Prime importance to pedestrian				
Agree	109 (25.4)	295 (68.9)	404 (94.4)	χ^2=2.43, *P*=0.11
Disagree	10 (2.3)	14 (3.2)	24 (5.6)	

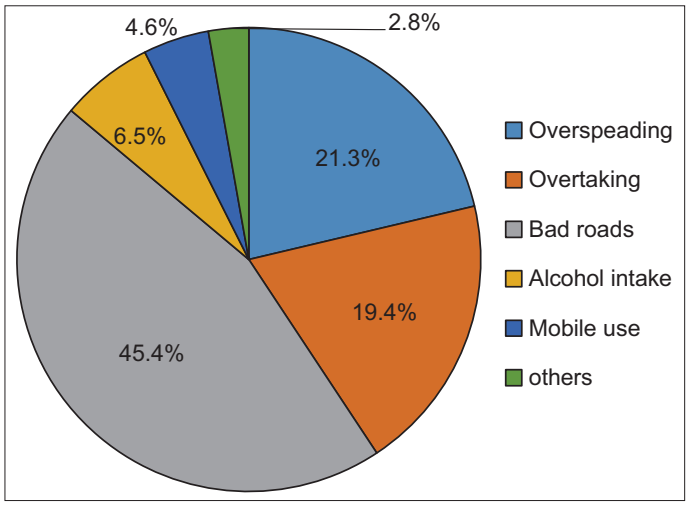

Figure 4: Reasons for road traffic accidents among study participants (n = 108)

A study conducted by Al-Naggar and Al-Jashamy, found moderate degree of knowledge regarding road safety among study participants. Nearly 93.6% of the students were convinced regarding the importance of using seat belts.[7] The current study revealed that 96.7% have a good knowledge regarding compulsory use of seatbelt. Majority, that is, 96.7% felt that it was not correct to use mobile phone while riding/driving and this was statistically significant with respect to gender (Chi-square value: 6.2, P = 0.01). Similar finding was seen in a study conducted by Lalitha *et al*. where more than 90% of the students agreed that it is not correct to use mobile phone while riding or driving.[8] Only 32.2% of the study participants were riding/driving without a valid driving license. Similar finding was also found in a study conducted by Kalbandkeri *et al*. wherein 29.1% did not have a valid driving license.[9] In a study conducted by

Table 2: Sex-wise distribution of attitudes regarding road safety among study participants

Variables	Male	Female	Total	Statistical test
	No (%)	No (%)	No (%)	
Driving before acquiring license is all right				
Yes	33 (7.7)	64 (14.9)	97 (22.7)	χ^2=2.41, P=0.12
No	86 (20)	245 (57.2)	331 (77.3)	
Road signs and symbols help in reducing accidents				
Yes	93 (21.7)	249 (58.1)	342 (79.9)	χ^2=0.316, P=0.57
No	26 (6)	60 (14.01)	86 (20.1)	
Pillion or back seat rider must use helmet/seat belt				
Yes	67 (15.6)	205 (47.8)	272 (63.6)	χ^2=3.73, P=0.053
No	52 (12.4)	104 (24.2)	156 (36.4)	
Use of mobile phones while riding/driving				
Agree	8 (1.8)	6 (1.4)	14 (3.3)	χ^2=6.2, P=0.013
Disagree	111 (25.9)	303 (70.7)	414 (96.7)	

Table 3: Road safety practices among study participants

Variables	Male	Female	Total	Statistical test
	No (%)	No (%)	No (%)	
Seat belt use				
In the city	7 (14)	10 (10.6)	17 (11.9)	χ^2=0.44, P=0.93
On highway	16 (32)	30 (31.9)	46 (31.9)	
Both	24 (48)	49 (52.1)	73 (50.7)	
None	3 (6)	5 (5.3)	8 (5.6)	
Helmet use				
In the city	15 (14.9)	33 (13.8)	48 (14.1)	χ^2=2.9, P=0.403
On highway	43 (42.6)	83 (34.7)	126 (37.1)	
Both	39 (38.6)	106 (44.4)	145 (42.6)	
None	4 (4)	17 (7.1)	21 (6.2)	
Valid driving license				
Yes	98 (22.8)	192 (44.8)	290 (67.7)	χ^2=16.07, P≤0.001
No	21 (4.9)	117 (27.3)	138 (32.2)	

Kashinakunti *et al*., good road safety was reported among 58.9% of the participants.

Strength of the study was that a large sample size of 428 students was included in the study. However, only one college was taken and all students were included. There was no sampling method used to select the participants.

CONCLUSIONS

The overall level of knowledge and attitude towards road safety measures was good among the participants in the current study but it was not seen to be well practiced. Hence, there is a need to stress on improving road safety practices among college youth. Bringing about behavior change regarding road safety measures through information, education, and communication/behavior change communication activities and consistently implementing measures of traffic rules will contribute to make youth responsible citizens of the country which will eventually bring reduction in the morbidity and mortality due to RTAs. Furthermore, good intersectoral coordination among various departments such as department of road traffic, public works department, and department of education is required to reduce road traffic accidents in future.

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