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A study on knowledge and self-reported practices towards road safety regulations among university students in selected college in Mangaluru

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Abstract

Injuries represent 12% of the global burden of disease, causing mortality among 1- 40yrs as the third most important cause. 25% of all deaths from injury are due to road traffic injuries according to WHO. **Objectives:**1. To assess knowledge regarding road safety regulations among university students.2. To assess the self-reported practices regarding road safety regulations among university students. **Methodology:** A descriptive survey design was adapted. The study was conducted among 150 university students of Father Muller College of Nursing by simple random sampling. Structured knowledge questionnaire and self-reported rating scale were used to collect the data. The reliability of the tool, of structured knowledge, was 0.7 and self-reported practice 0.75, was reliable. **Results:** Majority (45 %) of participants had good knowledge and moderately safe practices (52 %) on road safety regulations. Majority of the participants had information about road safety regulations (79 %) and source of information about road safety regulations is through media (48 %). There was a significant association between knowledge and baseline variables on parent's monthly income of university students. There was a weak positive correlation between knowledge and self-reported practices of university students on road safety. **Conclusion:** It was alarming that only half (52%) had safe practices on road safety regulations.

Keywords: Knowledge, Road safety, University students, Self-reported practices.

Introduction

Road traffic fatalities around the world have become a global issue & the decade 2011-20 has been declared towards actions strengthening road safety by the United Nations general assembly. It is reported that 1.3 million people are killed due to road traffic accidents every year and also constitute the leading cause of physical disability. (The United Nations assembly, 2017). The

year 2015, India reported 4.96 lakh fatal road accidents which are alarming. (National Crime Records Bureau, 2015). If effective measures are not undertaken the fatalities can be increased to 2.4 million annually (The United Nations assembly, 2017).

Road accidents cause a serious impact on human development in most developing member countries (DMCs) according to a study on road safety. In developing countries like India, they also contribute to a social and economic problem. India faces many road safety issues like increase of motor vehicles, lack of traffic safety regulations, poor quality of roads and vehicles, and inadequate public health infrastructures (Madan, 2006).

WHO estimates that every day almost 16,000 people die from all types of injuries. Injuries represent 12% of

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the global burden of disease, causing mortality among 1- 40 yrs as the third most important cause. 25% of all deaths from injury are due to road traffic injuries according to WHO (Govt. of Karnataka, 2019).

A study was conducted in 2006 to assess road safety awareness and practices among school children of Chandigarh. A questionnaire was administered to 787 students (479 males and 308 females) aged 14 to 18 years across 8 schools in Chandigarh. Both knowledge and practice were evaluated in the questionnaire. Results showed 40% of students lack the correct knowledge of traffic safety rules. 67.3% of the respondents lack knowledge on the correct speed limit. 63% of girls were well versed with traffic signals and 41.2% on crossing zebra lines, whereas 49.8% of boys were aware of pedestrian's rules. Good knowledge of risk factors of road safety awareness and practices was reported by 60% of school children (Thamarai, 2013)

Road safety and regulations provide a basis for improving the behaviour of road user as it promotes a positive attitude. This has an impact on children who tend to follow behaviour and develop attitude from their parents on road safety regulation. It is suggested that it's better to develop the right attitude and behaviour on road safety regulation in its formation stage rather than rectify what is already developed. This can in turn help in reducing road traffic accidents (Thamarai, 2013).

Objectives

1. To assess the knowledge regarding road safety regulations by using structured knowledge questionnaire among university students.
2. To assess the self-reported practices regarding road safety regulations using self-reported practice scale among university students.
3. To find a correlation between knowledge and self-reported practices on road safety regulations among university students.

Material and methods

An cross-sectional design was used. The study was conducted in selected College of Nursing, Mangalore using a simple random sampling technique to select 150

BSc(N), students. Structured knowledge questionnaire and self-reported practice rating scale were used to collect the data. The reliability of structured knowledge was 0.7 and self-reported practice was 0.75.

Tool description

The tool consisted of baseline proforma with 13 items such as age, gender, religion, course, education and occupation of parents, residency, parents monthly income, previous accident, previous information on road safety and regulations, and attended programs on road safety and regulations. Blueprint on structured knowledge questionnaire on road safety and regulations had 12 items & comprised of two areas, traffic rules and regulations 50%, safety 50% and self-reported practice rating scale on road safety and regulations had 14 items and comprised of two areas, traffic rules and regulations 21.43%, safety 78.57%, respectively.

Data collection process

The study was conducted on 08 April 2017 in the selected college Mangaluru. Ethical Clearance & Formal permission was obtained from the concerned authorities before the data collection. The investigators introduced themselves and the purpose of the study was explained to the participants. Informed consent was obtained from the participants. The demographic variables, structured knowledge, the self-reported practices rating scale was given to the participants and the filled questionnaire were collected back. The data collection was terminated and was compiled for analysis.

Results

Table 1:
Frequency and percentage distribution of participants, according to their baseline characteristics

N=150		
Variables	Frequency (f)	Percentage (%)
Age in years		
18 years	2	1%
19 years and above	148	99%
Place of residence		
Urban	75	50%
Rural	46	31%
Semi urban	29	19%

Variables	Frequency (f)	Percentage (%)
Met with a road traffic accident		
Yes	28	19%
No	122	81%
Information about road safety regulation		
Yes	118	79%
No	32	21%
Source of information		
Family	15	10%
Friends	4	3%
Teachers	25	17%
Media	72	48%
Any other specify	2	1%
Ridden/driven any vehicle without the license		
Yes	30	20%
No	120	80%

In the present study, most of the university students 148 (99%) were in the age group of 19 years and above. Majority of the university students 72 (48%) got the information through mass media. Less than half, 30 (20%) drove a vehicle without a licence.

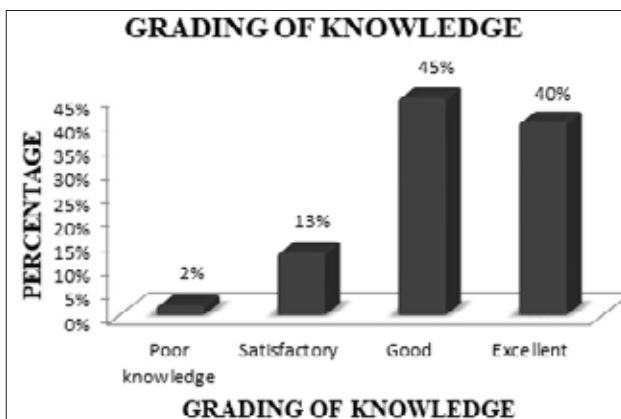


Figure 1: Bar diagram showing the distribution of subjects based on their knowledge regarding road safety regulation.

The study show that 68 (45%) of the university students reported good knowledge regarding road safety regulation and only 2% showed poor knowledge.

Table 2:

Domain wise mean, standard deviation and mean percentage of knowledge score.

N=150					
Area	Number of items	Max score	Range	Mean \pm Standard deviation	Mean %
Traffic rules and regulation	6	6	5	4.38 \pm 1.29	72.7%
Safety	6	6	5	26 \pm 1.16	71.4%

Maximum score: 12



Figure 2: Bar diagram showing the distribution of university students according to self-reported practice on road safety regulation.

With regard to the self-reported practice on road safety regulation, majority, 72 (52%) had moderately safe practices & 1 (1%) had unsafe practice on road safety regulations.

Table 3:

Domain wise: Mean standard deviation and mean percentage of the self-reported practice of university students on road safety regulations.

N=150					
Areas	Item	Maximum score	Range	Mean \pm Standard deviation	Mean %
Traffic rules and regulation	3	9	5	6.54 \pm 2.76	72.6%
Safety	11	33	16	1.10 \pm 2.80	83.6%

Maximum score: 42

Table 4:
Correlation between knowledge and self-reported practice towards road safety regulations

N=150			
Variables	Mean± Standard deviation	r value	p value
Knowledge	8.65±2.04	0.221	.006
Practice	34.16±3.14		

Correlation between the knowledge and self reported practice towards road safety regulations revealed a weak positive correlation between knowledge and self-reported practices on road safety regulations ($r=0.221$, $P=.006$).

Table 5:
Association between knowledge on road safety regulation and selected baseline variables

N=150			
Variables	<Median (9)	>Median (9)	p value
Age in years			
17 years	0	0	.22
18 years	0	2	
19 years and above	63	85	
Education qualification of father			
No formal education	0	0	.90
Primary education	2	3	
SSLC	16	25	
PUC	16	23	
Undergraduate	28	33	
Postgraduate and above	1	3	
Education qualification of mother			
No formal education	0	0	.90
Primary education	2	3	
SSLC	16	25	
PUC	16	23	
Undergraduate	28	33	
Postgraduate and above	1	3	
Occupation of parents			
Father			
Medical	0	1	.69
Non-medical	63	86	
Mother			

Variables	<Median (9)	>Median (9)	p value
Medical	6	3	.28
Non-medical	57	84	
Parents monthly income in rupees			
Don't know	14	17	.05*
≤ 10000	5	1	
10000-50000	37	65	
≥50000	7	4	
Place of residence			
Urban	37	38	.17
Rural	15	31	
Semi-urban	11	18	
Met with a road traffic accident			
Yes	13	15	.59
No	50	72	
Information about road safety regulation			
Yes	50	68	.58
No	13	19	
Source of information			
Parents or relatives	9	6	.58
Friends	2	2	
Teachers	10	15	
Media	30	42	
Any other specify	0	2	
Attended any programs on road safety regulations			
Yes	33	46	.95
No	30	41	
Ridden/driven any vehicle without the license			
Yes	9	21	.13
No	54	66	

* Significant; $p<.05$

Chi square was used to find the association between the knowledge and selected variables. A significant association was found between knowledge of university students and monthly income of the parents ($P=.05$).

Discussion

A study found that the majority of subjects were of 16 years. Among 360 participants, knowledge on the road safety rules and regulations was adequate in 186 participants (51.7%) and inadequate knowledge in 174

participants (48.3%). 56.9% had awareness on penalty for driving without a valid driver's license. Awareness of using seat belt and helmet was reported among 98.1% and 99.4% respectively. Driving speed limit in the city (40 kmph) was known by 54.4% participants. Only 33.1% of participants had correct knowledge of traffic lights. Majority of the participants had a positive attitude towards road safety rules and regulations (Mary, Chitra, Arunmozhi, & Sheila, 2016).

A study reported that the majority (77%) of the victims were in the age group of 18-44 years. Females (17%) had a lower accident rate than males (83%). Five percent of the victims (n=75) succumbed to injuries, of whom 45 died on the spot. Non-g geared vehicles were reported to be less commonly involved when compared to geared vehicles (81%). The highest number of accidents was seen during 6-10 pm (Jain, Menezes, Kanchan, Gagan, & Jain, 2009).

A study found that among 238 response rate to the questionnaire was 80%. It was reported that 21 years was the mean age of the participants, 70% to 72% had cars and driving licenses and 47% lived in cities. Majority of the students were reported to be involved in RTAs of which 83.3% of them were injured and 41.6% admitted to hospital for an average of 11 ± 1.3 days the cause is over speeding. More than 90% of the students had moderate knowledge of road traffic regulation and the importance of the use of seat belts was believed by 85%. Students who came from villages were found to drive faster than those living in cities ($p=.006$). Students who considered themselves more knowledgeable were found to drive faster than the others ($p=.02$). Forgetfulness and anxiety were reported to be the cause of problems with the use of seat belts by 75% of participants (Al-Zahrani, 2015).

A study found that among 60 students participated in the study only 14 students (36.9%) had information through media. Post-test mean score on knowledge was found higher (81.1%) when compared to pretest scores (47.3%). The calculated t value was 28.12 with Mean \pm SD of 12.82 ± 3.52 indicating enhancement of knowledge (Thamarai, 2013).

A study revealed that 84% of students drive two wheelers and only 3.3% of them had learned driving training from a driving school. A driving license was

possessed by 38.7% and road traffic accident was reported among 20% of them. 18.7% reported to have adequate knowledge about road traffic safety and regulations. In terms of attitude, 62.0% of students strongly agreed for the fact that driving license should be made mandatory to drive a motor vehicle and use of alcohol should strictly prohibited while driving (57.3%). (Sharma & Saini, 2017)

A study found that forty percent of students lacked correct knowledge of traffic safety rules. 67.3% of the respondents lacked knowledge of the correct speed limit. Girls were more aware of traffic rules to be followed at traffic lights (63%) and while crossing zebra lines (41.2%), whereas boys were more versed with rules for pedestrians (49.8%). Around 60% of school children had correct knowledge of risk factors (Swami, Puri, & Bhatia, 2006).

A study found that 98.7% of the participants knew driving after consuming alcohol was dangerous, the driver gets distracted by talking and loud music in the car while driving was known by 92.9% and 91.6% respectively. The study also reported awareness of driving cautiously near the school by 98.4%, safe time for reading a map while parking vehicle by 85.8%. 96.1% of participants reported awareness on wearing a seat belt in the car, 84.8% to drive in the left lane, 88.1% to give way to the ambulance, 83.9% to use hand-free device while driving respectively. 88.7% reported to wait patiently when pedestrians take too much time in zebra crossing and 97.4% had correct knowledge of speed limit respectively. 81.8% of males had significantly better knowledge compared to 71.7% of females ($p=.035$) (Reang & Tripura, 2014).

A study reported that out of 50 samples, 16 (32%) of them had inadequate knowledge, 20 (40%) of them had moderately adequate knowledge and 14 (28%) of them had adequate knowledge. Regarding practice on road traffic regulations out of 50 samples, 22 (44%) of them had poor practice, 24 (48%) had a good practice and 4 (8%) had best practice. There was a positive correlation between knowledge and practice, knowledge regarding road traffic regulations (Indhumathy, Thenmozhi, 2016).

A study found that of 109 students with the mean age of 20.94±1.89 years participated in this study. Involvement in a road traffic accident was reported among 39 (35.7%) of the participant and 93.6% of them were convinced of seat belts importance. The analysis showed that age and attitude were significantly associated with exposure to the accident (Redhwan & Karim, 2010)

Conclusion

The study concluded that 45% of students had good knowledge and only 52 % of them had moderately safe practices on road safety regulations which is alarming. Nurse-educators have an important role to recapitulate knowledge to stimulate and motivate students through periodic road safety programs & to ensure action according to safety conventions.

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