INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

KNOWLEDGE, ATTITUDE AND PRACTICE OF ROAD SAFETY MEASURES AMONG UNDERGRADUATE MEDICAL STUDENTS IN A TERTIARY HEALTH CARE INSTITUTE, MEDCHAL, TELANGANA STATE.

Community Medicine

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ABSTRACT

BACKGROUND: Globally road traffic accidents (RTA) causes more than 1.35million deaths, 50million injuries and considered leading killer among adolescents. Everyday nearly 400people die and many disabled in India. Human behaviour and acceptance of safety are central to road safety.

OBJECTIVES: To assess knowledge, attitude and practice of road safety measures among medical students in a tertiary health care facility.

METHODS: A cross-sectional study was conducted among 302 medical students during the period April-May2019 by using semi-structured questionnaire in a tertiary care institute at Medchal, Telangana.

RESULTS: Respondents mean age was 20.59 year, 71.5% had adequate knowledge on road safety measures, 95.6% had good attitude and 12.7% were never used helmet while driving. Bad roads (43%) was the main reason for RTA. Attitude towards road signs and symbols help to reduce road accidents, practice of eating or drinking while driving and education of respondents mother were associated with knowledge (p <0.05).

CONCLUSION: Knowledge acquired is not getting transformed into practice, necessitating to intensify the measures by IEC activities, strict implementation of legislation and motivating to convert knowledge into practice.

KEYWORDS

Road Traffic Accidents, Knowledge, Attitude, Practice, Telangana

INTRODUCTION:

Road traffic accidents (RTA) is the eight leading cause of death among all the age groups. Globally, RTA cause more than 1.35 million deaths and 50 million injuries. Low- and middle-income countries share the greatest burden of road traffic fatalities and injuries[1]. Globally, rise in deaths due to RTA is mainly due to urbanization, motorization and rapid economic growth in low and middle-income countries[2].

In India, on an average 53accidents and 17deaths occur every hour due to RTA[3]. In 2015, 2.9%of all deaths and 43%of all injury deaths were attributed to RTA with 3%decrease in GDP due to disabilities, deaths and family loss. India being the home for second longest road network in the world with 4.8%highways, there is continuous rise in RTA and deaths due to lagging of infrastructure expansion and safety parameters. Road design, maintenance, human behaviour and acceptance of safety are key to road safety. Drunken driving, speed, compliance to seat belt usage and distracted driving due to cell phones are more associated with RTA[4]. The current level of enforcement pertaining to helmet usage in India is only 40%, leading to 91.6%of RTA in motorcyclists in the year2017[3]. There is a need of a drastic action to reach Sustainable Development Goal(SDG)3.6 target to half road deaths and injuries by2020[1].

Road accidents are being predictable and preventable. Behavioural change on road safety measures among young adults would decrease mortality and morbidity due to RTA. Some of the studies conducted across the India in relation to road safety measures among medical students yielded lack of awareness among them[5–13]. Due to scarcity of data, the present study was conducted to assess the level of knowledge, attitude and practise among medical students at tertiary health care institute of Medchal-Malkajgiri district, Telangana state.

OBJECTIVE:

To assess the knowledge, attitude and practise of road safety measures among undergraduate medical students in a tertiary health care facility.

MATERIALS AND METHODS:

The present cross sectional study was carried out at a tertiary health care facility in Medchal-Malkajgiri district, Telangana during April-May2019. After calculation for adequacy of the sample size[6], total 302students were included in the study. Students who did not give the consent and who were absent on the day of data collection were excluded. After explaining nature and scope of the study informed written consent was obtained. Socio economic status (SES) was assessed using modified BG Prasad classification. A pretested semi structured self-administered questionnaire was prepared using some of the previous studies[5,7,8] on knowledge, attitude and practice on road safety measures. It had four domains namely, sociodemographic data, knowledge, attitude and practise of road traffic measures. A total of 26 questions, knowledge (9), attitude (6) and practise (11) of road traffic measures. A detailed protocol was submitted and permission was obtained from institutional ethical committee.

STATISTICAL ANALYSIS PLAN:

The data was processed in to excel sheet and analysed by using Statistical Package for Social Sciences (SPSS version17.0). Chi-square test/ Fisher exact test were used. P value<0.05 was considered as significant.

RESULTS:

The present study was conducted among 302 respondents, 152 (50.3%) were in ≤ 20years age group, most of them were females 218(72.2%). Majority 299 (99%) were from class-I SES (Table-1). The overall knowledge was adequate (Score ≥7) in 216 (71.5%) and inadequate in 86 (28.5%) with no gender-wise statistical difference. Most of the respondents had a favourable attitude towards road safety measures. About 48 (15.9%) were against the attitude that non-use of helmet increases accidents. The distribution of practise among respondents showed that 29(12.7%), 43(14.2%), and 25(8.3%) never used helmets, seat belts and zebra crossings respectively. While driving a vehicle 18.9 %, 14.1 % and 15.4 % respondents were very often listened a loud music, used electronics and used headsets respectively (Table-2). Among the total RTA (48.2%) experienced, 90(61.6%) were motor vehicle and 54 (36.9%) pedestrian related accidents. The most common reason for RTA was bad roads. (Figure-1). Road signs and symbols help reduce accidents (attitude), eat or drink while driving (practice) and maternal education, showed association with knowledge (p<0.05) (Table-3).

DISCUSSION:

RTA are the leading killer in the adolescents affecting nation's growth. In the present study majority were females. Other studies conducted by Arti.et.al[5] and Kulkarni.et.al[8] are in agreement with the present study. Which might be due to female predominance among medical students. Majority of the respondents were from high SES. Similar to study conducted by Taranga et.al. [12].

Overall knowledge was adequate (71.5%) among respondents, similar to study by Arti.et.al[5] and Contrarily, the level of knowledge was high(91.1%) in studies by Kalbandkeri LR.et.al[7] and 82% Emmily.et.al[9].

Among respondents 95.6% had good attitude and 98% felt that following traffic rules reduce accidents, which is very high compared to study by Kalbandkeri LR.et.al[7] due to increased awareness. 84.1% believe that non-use of helmet increases accidents. 12.7% of respondents never used helmet which is similar to studies conducted by Kulkarni.et.al[8] and low compared to studies conducted by Taranga Reang.et.al[12] and Emmily.et.al[9]. About 1.8% never followed road signs and symbols which is low compared to studies by Kulkarni.et.al[8] and Kulothungan.et.al[13]. 14.2%respondents never weared seat belt, which is very high compared to studies by Emmily.et.al[9] and Kulothungan.et.al[13]. These findings necessitate increasing awareness among adults through IEC activities and strict enforcing of laws.

The prevalence of RTA among the respondents was 48.2% whereas in a study conducted by Manjula.R.et.al[6] it was 13.3%, the difference might be due to difference in duration of recall. The main reasons for RTA in the present study were bad roads (43%), high speed (41%) and drunken drive (33%) similar reasons were found in studies by Syed et.al[11] and Kalbandkeri LR.et.al[7]. This shows that maintenance of roads along with strict enforcement of legislation is necessary. In the present study attitude of road signs & symbols help to reduce road accidents, practice of eat or drink while driving and education of respondent's mother were associated statistically with knowledge regarding road traffic measures, whereas in a study conducted by Taranga Reang.et.al[12] practice of overtaking from left and unusual speed limit maintained while driving were statistically significant with knowledge, which were not considered in our study and difference with regard to knowledge criteria from the present study.

CONCLUSION:
Knowledge acquired is not getting transformed into practice, necess itating to intensify the measures by IEC activities, strict implementation of legislation and motivating to convert knowledge into practice. Being in a field close to the community, medical student's knowledge, attitude and practice would have an impact in educating the common people in the community.

TABLES
**Table 1- Demographic characteristics of study participants.**

Characteristics		Frequency n (%)
Age	≤20 years	152 (50.3)
	≥21 years	150 (49.7)
Mean Age ± SD		20.59 ± 1.85
Sex	Male	84 (27.8)
	Female	218 (72.2)
Education	1st year	119 (39.4)
	2nd year	35 (11.6)
	3rd year	82 (27.2)
	4th year	66 (21.9)
Father education	Illiterate	22 (7.3)
	Schooling	96 (31.8)
	Graduate	118 (39.1)
	Postgraduate	66 (21.9)
Mother education	Illiterate	3 (1)
	Schooling	43 (14.2)
	Graduate	140 (46.4)
	Postgraduate	116 (38.4)
Socio-economic status	Class I	299 (99)
	Class II	2 (0.7)
	Class III	1 (0.3)
	Class IV	0 (0)
	Class V	0 (0)

Table 2- Knowledge attitude and practise regarding road traffic measures among study respondents.

Knowledge (N=302)	Correct n (%)	Incorrect n (%)			
Age to get major driving license?	279 (92.4)	23(7.6)			
Is it compulsory to put on the seatbelt while you are in a moving car?	297 (98.3%)	5 (1.7)			
Normal speed limit for driving in city?	207(68.5)	95(31.5)			
Permissible blood alcohol limit for driving in India?	105 (34.8)	197 (65.2)			
Is it compulsory to wear a helmet while riding a two wheeler	297 (98.3)	5 (1.7)			
Identify Road signs	108 (35.8)	194 (64.2)			
Indication of amber (yellow) light?	273 (90.4)	29 (9.6)			
From where do you overtake a vehicle?	235 (77.8)	67 (22.2)			
On which side of the road you must walk to reduce accidents?	282 (93.4)	20 (6.6)			
Maximum penalty for driving without a valid driver's license?	54 (17.9)	248 (82.1)			
Attitude (N=302)	**Yes n (%)**	**No n (%)**			
Pedestrians must be given prime importance regarding safety?	297(98.3)	5 (1.7)			
Following traffic rules reduce accidents?	296 (98)	6 (2)			
Road signs & symbols reduce accidents?	290 (96)	12 (4)			
Non-use of helmet increase accident chance?	254 (84.1)	48 (15.9)			
Using mobile phone increase accident chance?	296 (98)	6 (2)			
Owing licence for vehicle is necessary?	298 (98.7)	4 (1.3)			
Practice (n=228)	**Always**	**Very often**	**Some times**	**Rarely**	**Never**
Wear helmet while driving two wheeler	49(21.5)	73(32)	50(21.9)	27(11.8)	29(12.7)
Drive when sleepy?	1(0.4)	6(2.6)	25 (11)	51(22.4)	145(63.6)
Use electronic device while driving	6(2.6)	32(14)	16(7)	54(23.7)	120(52.6)
Use headset while driving	4(1.8)	35(15.4)	10(4.4)	51(22.4)	128(56.1)
Eat or drink while driving	4(1.8)	21(9.2)	29(12.7)	46(20.2)	128(56.1)
Listen to loud music while driving	8(3.5)	43(18.9)	15(6.6)	55(24.1)	107(46.9)
Drive under influence of alcohol	1(0.4)	1(0.4)	11(4.8)	5(2.2)	210(92.1)
Use seatbelt when traveling in four wheeler (N=302)	59(19.5)	80(26.5)	81(26.8)	39(12.9)	43(14.2)
Use zebra crossing to cross road (N = 302)	79 (26.2)	84 (27.8)	78(25.8)	36(11.9)	25(8.3)
Obey road signs & symbols	71 (31.1)	64 (28.1)	73(32)	16(7)	4(1.8)

*Practice was considered for respondents who ever drove a vehicle (228)

Figure 1- Reasons for Road Traffic Accident in respondents who met with accident   (n=146).
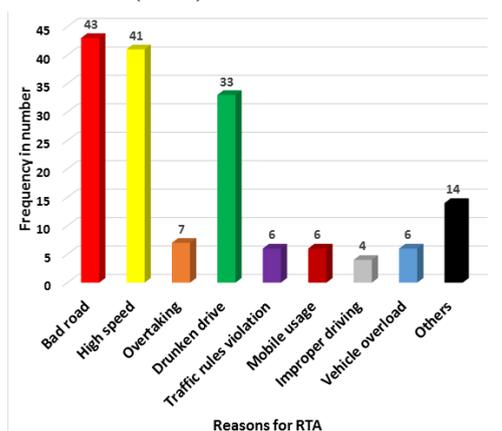
*Multiple responses not equal to 100%

Table 3- Association of attitude and practice with knowledge.

		Inadequate knowledge	Adequate knowledge	p-value
Road signs & symbols help to reduce road accidents	No	7 (8.1)	5 (2.3)	0.02
	Yes	79 (91.9)	211 (97.7)	
Eat or drink while driving	Always	0 (0)	4 (2.4)	0.03
	Very often	12 (18.8)	9 (5.5)	
	Sometimes	6 (9.4)	23 (14)	
	Rarely	14 (21.9)	32 (19.5)	
	Never	32 (50)	96 (58.5)	
Mother education	Illiterate	8 (12.5)	8 (4.9)	0.02
	Schooling	28 (43.8)	40 (24.4)	
	Graduate	19 (29.7)	73 (44.5)	
	Postgraduate	9 (14.1)	43 (26.2)	

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