A Cross Sectional Study on the Awareness and Practice of Road Safety Measures among the Medical Students in Chennai

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Abstract

Background: The global epidemic of road traffic accidents is still increasing. The present study was aimed to assess the level of awareness regarding road safety among the study participants and to study the behaviour patterns while using motorised vehicles among the study participants.

Methods: The present cross-sectional study was conducted in Saveetha medical college and hospital, Chennai. A total of 125 students were studied. The study period was from 21st January 2019 to 30th March 2019.

Results: In total, 125 medical students were studied, ranging from 1st to final year M.B.B.S. of age 19-24 years; the mean age being 21.4 .Only 65(52%) participants wear helmet and only 22(17.6%) participants interpreted Gap-In-Median correctly.

Conclusions: The awareness regarding road safety measures among the study group was satisfactory but interpretation of the road signs was not satisfactory -only 17.6% interpreted them correctly. The behavioural patterns among medical students are not satisfactory-only 52% of students wear helmet while riding, only 49.6% wear seat belts always while 41.6% wear seatbelt's sometimes and 24% don't follow lane rules while driving.

Keywords*: Road safety measures, Undergraduate students, Awareness, Behavioural patterns.*

Introduction

A road traffic accident (RTA) is any injury due to crashes originating from, terminating with or involving a vehicle partially or fully on a public road. It is projected that road traffic injuries will move up to the third position by the year 2020 among leading causes of the global disease burden [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 in India will rise to the fifth leading cause of deaths by 2020 [3]. It may result in an estimated 2.4 million fatalities per year. Developing countries like India face the double burden of already existing communicable diseases and increasing burden of non-communicable diseases including RTAs [4]. Moreover since it is affecting the younger generation of India, the future assets of the country are turning into a liability which is not ideal for the progression of our developing country to a developed one.

Road traffic accidents cost most countries more than 3% of their gross domestic product. Injuries sustained during RTAs cause considerable economic losses to individuals, their families, and to nations as a whole. The losses incurred are from the cost of treatment as well as lost productivity of those killed or disabled by their injuries, and for family members who need to take time off work or school to take care of the affected family member. An increase in average speed is directly related both to the likelihood of a crash and to the severity of the aftermath. Road traffic injuries can be prevented.

The 2030 Agenda for the Sustainable Development has set a lucrative target of halving the global number of fatalities and injury from road traffic accidents. This requires a hand from multiple modalities such as police, transport, education, medical, and actions that address the safety of vehicles, roads, and road users. Major interventions such as safer infrastructure and stressing the importance of road safety features in the transport planning, improving the safety of vehicles by enhancing the protective features , improving post- accident medical care for victims of crashes, making and enforcing laws relating to important risk aspects, and more importantly improving the awareness among the public. Simple measures such as following the road safety measures properly and also having the basic awareness about road safety can effectively reduce the impact of RTAs. On top of this another survey stated that in the last decade alone, India lost 1.3 million people to preventable road crashes and another 5.3 million have been left disabled for life [5].

The present study is aimed to assess the level of awareness regarding road safety among the study participants and to study the behaviour patterns while using motorised vehicles among the study participants. It is a questionnaire based retrospective study.

Methods

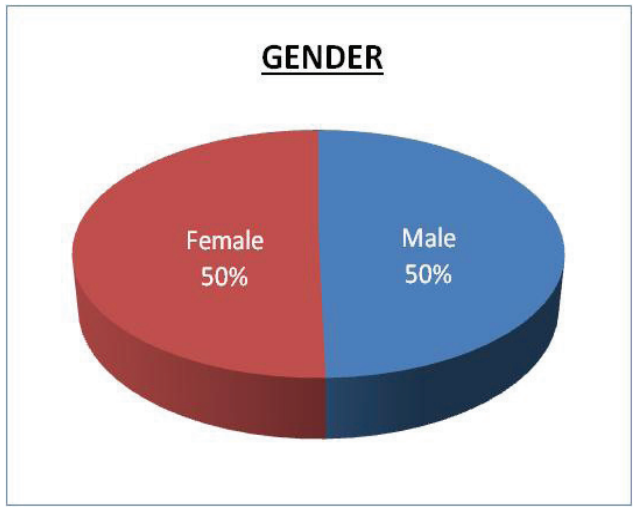
The present cross-sectional retrospective study was conducted in Saveetha medical college and hospital, Chennai with the aim to study the awareness of students on road safety and the road traffic accidents associated with them. Undergraduate MBBS students were included in the study, both male and females took part in this study. Students without driving licenses were included in the study as violation of the road traffic rules were incorporated in the questionnaire. Students belonging to the age group of 19 to 24 years were targeted in this study and a total of 125 students were studied. Mean age of the study group was 21.4.The study period was from 21st January 2019 to 30th March 2019.

A pretested semi-structured Questionnaire including general information and specific questions regarding awareness and behavioural patterns about road safety measures was given to the study participants and were instructed to fill them, the questionnaire validation had been accounted for by esteemed professionals and filled Questionnaire were obtained from the participants. A total of 27 multiple choice questions were included and the participants were asked to answer every question. Every possible measure was taken so as to uphold the confidentiality that was promised to the participants in the first place. No personal information regarding the participants was let out and the participants were also provided with the contact number and address of the principal investigator in the information sheet which the participants were given the liberty to take it with them if they wish.

Any queries regarding the study was well appreciated and addressed to in the best manner possible. The participants were also given the liberty to pull out of the study whenever they wanted if they felt unsafe or uncomfortable with the study. After obtaining the data, it was entered in excel spreadsheet and was analysed using SPSS software and frequencies and percentages were obtained.

Results

In total, 125 medical students were studied, ranging from 1st year to 4th year MBBS of age 17-25 years. 72(57.6%) participants were 19 years old, 30(24%) participants were 20, 7(5.6%) participants were 21, 2(1.6%) participants were 23 and 14(11.2%) participants were 24 years old. 62(49.6%) participants were male and 63(50.4%) participants were female (Refer Fig 1).



(Fig 1) Gender of Participants

Out of 125 participants, 64(80%) participants did not attend any programs regarding road safety measures and 36(45%) participants had attended. The response to the question whether the participants always wear their helmets was equally split among yes and no. To the question “From which side are you supposed to overtake vehicles” almost 63% participants gave the correct answer which is from the right side.

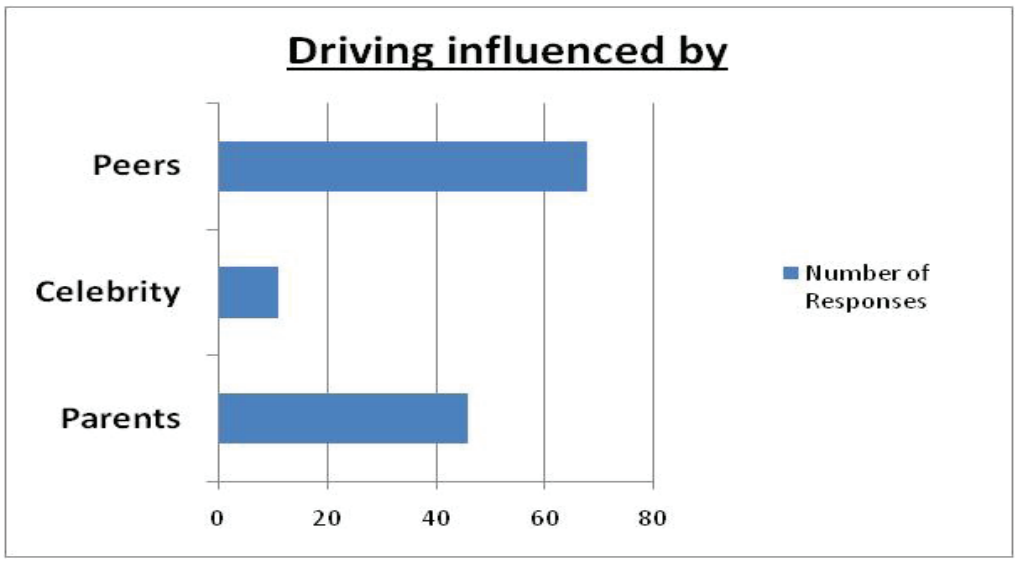
From the data collected, 31(24.8%) participants said they use mobile phone while driving, 94(75.2%) participants said they don't. Majority of the participants told they do not always drive below the speed limit mentioned on the signboard. Another alarming result was the number of people who drive vehicles without obtaining their driving license, 74(59.2%) participants answered that they had driving license and 51(40.8%) participants answered no. When asked the question regarding the importance and necessity of wearing seatbelt's or helmet more than 90% participants answered yes which is satisfactory. 110(88%) participants answered no to the question "Have you ever driven a vehicle under the influence of alcohol?" and 15(12%) participants answered yes.

Among the participants, 58(46.4%) participants answered 0.03% to the question "What is the permissible blood alcohol content for drivers in India" which is the correct value and the rest 67(53.6%) participants answered wrongly. The results obtained regarding getting apprehended by the police for flouting road rules were meagre. 97(77.6%) participants answered that they always follow the lane rules while driving whereas the rest 28(22.4%) participants answered in the contrary. 95(76%) participants kept track of their vehicles condition and service records whereas the rest 30(24%) participants did not. A good chunk of the study group had violated the traffic signals at least once in their lifetime. (Refer table 1).

(Table 1) Compliance Pattern Of The Traffic Rules Among The Participants

Questions	Yes	No
Have you ever been caught by the police for drunk and drive	6 (4.8%)	119 (95.2%)
Do you always follow lane rules	97 (77.6%)	28 (22.4%)
Have you ever skipped a signal	51 (40.8%)	74 (59.2%)
Do you keep track of your vehicles condition and service records	95 (76%)	30 (24%)

Identification of road signs was poor only a handful answered correctly. 95(76%) participants felt that drinking and driving was more dangerous than texting and driving. When asked who was the most influential person for a teen driver, mixed results were obtained (Refer fig 2).



(Fig 2) Impact of Social Circle on Driving

92(73.6%) participants answered that they always stop their vehicles within the stop line at the signal whereas the

rest 33(26.4%) participants answered they don't always stop before the line. When asked to give a response on the maximum number of people who could travel safely on a two wheeler 106(84.8%) participants answered 2, 12(9.6%) participants felt it was 3, 6(4.8%) participants felt it was 4 and only 1(0.8%) participant felt it was 1. 92(73.6%) participants were aware of the stipulated hand signals to indicate slowing down, stopping, turning or overtaking and 33(26.4%) participants weren't aware of the hand signals. 50(40%) participants felt the police had the right of way over other vehicles on the road, 42(33.6%) participants felt it was the pedestrians , 22 (17.6%) participants felt it was the driver themselves and the rest 11(8.8%) participants felt it was animals. On giving the description about a road sign and asking to identify what modality it belonged to this was the response (Refer table 2).

(TABLE 2) KNOWLEDGE ABOUT THE ROAD SIGNS AMONG PARTICIPANTS.

Knowing your Road Signs	Guidance	Regulation	Warning
White characters on blue in general/ On Green in express ways	82 (65.6%)	35 (28%)	8 (6.4%)
Black characters and symbols on yellow diamond	27 (21.6%)	59 (47.2%)	39 (31.2%)
Red or Blue circle, depending on prohibition or regulation	16 (12.8%)	30 (24%)	79 (63.2%)

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 [6].

While India contributes only a meagre 1% of the world's vehicles, it accounts for more than 10% of global RTAs associated fatalities – the most in the world. According to the 2015 report on 'Road accidents in India', by the Transport Research Wing (TRW) of Ministry of Road Transport and Highways (MoRTH), 1,46,133 fatalities occurred in RTAs in 2015 which included a count of 12,589 children. This count is not only the highest that India has ever recorded in history, but it represents a 53.9% increase over the last decade, and nearly a ten-fold increase since 1970 [5].

The present study was conducted to assess the awareness and behaviour patterns regarding road safety measures among under graduate dental students. The mean age of the study participants was 21.4 and there was almost equal representation for both males and females. A study previously conducted reported that 67.3% were males and 32.7% were females [7,8]. Awareness of road safety measures among the participants was good. This may be due to the increase in campaigning through mass media. But only 79(63.2%) 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 22(17.6%) interpreted all the road signs correctly. Similar finding was observed by Gharaibeh et al in a study conducted in Saudi Arabia[9].Regarding the behavioural patterns, nearly 40.8% of the participants were not having a driving license. 48% of the study participants don't wear helmet always and 12% were involved in drunken driving.

Our findings were similar to the observation in the study conducted by Swamy et al in Chandigarh [10]. Use of seat-belts was one of the most cost effective way to prevent RTA related morbidity and mortality [11]. Thirty one (24.8%) participants admitted that they used mobile phones without hands free devices while driving. Furthermore, nearly seventy one (56.8%) 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 with an accident had drunken driving [13]. 28 (22.4%) participants answered they do not follow lane rules while driving, which was similar to the results obtained in a previous study [14].

An alarming 41% participants answered that they blow the red light when they are in a hurry which is a significant rise in percentage when compared to a previous study which stated that only 28% people believe in breaking the signals if they are in a hurry.

Almost 41% participants said they maintained their vehicles in prime condition and were happy with that while a previous study stated that 57% participants were willing to pay more to improve the condition of their vehicles in order to make it more foolproof on the roads [5].The behaviours concerning mobile usage and over-speeding while driving are highly dangerous to the driver and to the public. Hence, these behaviour patterns need to be addressed through proper legislative and educative measures.

From the results of the current study it is evident that the road safety rules aren't followed up to the mark yet. Still there is a high incidence of young people driving vehicles without passing their driving tests, people using mobile phones on the road and high speeding on roads just for the fun of it. The current study has also cemented the fact that usage of helmets and seat-belts are still below par. One more alarming fact is that majority of the study group didn't know what the basic sign boards meant which seems to be the most worrying aspect.

Practices relating to road safety should be encouraged to reduce the morbidity and mortality related to road traffic accidents. For young drivers to have a change and practice safe driving is by educating them the importance of having goals to drive and not to drive for sheer fun [15].

Conclusion

From the study it is pretty evident that the awareness on road safety measures among the study group satisfactory but interpretation of road signs was not up to the mark -only 17.6% interpreted the road signs correctly which is very poor. The behavioural patterns among medical students are not satisfactory-only 65% of students wear helmet while riding, only 49.6% wear seat belts always while 41.6% participants answered sometimes and 22.4% participants 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 needs to be conducted regarding this topic to assess the current situation regarding road safety measures across the various modalities and aspects 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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References

1. SaMal J, DehuRy RK. Salient Features of a Proposed Adolescent Health Policy Draft for India. Journal of Clinical and Diagnostic Research: JCDR. 2017 May;11(5):LI01..
2. 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
3. teenagers in indore. National J Comm Med. 2013;4(3):529-32.
4. Priyanka Raj CK, Sekhar Datta S, Jayanthi V, Singh Z, Senthilvel V. Study of knowledge and behavioural patterns with regard to road safety among high school children in a rural community in tamilnadu, India. Indian J Med Specialities. 2011;2(2):110-3.
5. Jogdand KS, Yerpude PN, Jogdand MS. A Study of awareness and behavioural patterns with regard to road safety among medical students in south india. Int J Bio Med Res. 2013;4(4):3590-2.
6. Chatterjee P. India's deadly roads. Bmj. 2013 Nov 18;347:f6912.
7. Jogdand KS, Yerpude PN, Jogdand MS. A Study of awareness and behavioural patterns with regard to road safety among medical students in south india. Int J Bio Med Res. 2013;4(4):3590-2.

8. Reang T, Tripura A. Roadsafety: Knowledge, practice and determinants among undergraduate medical students of Agartala Government Medical College and Govindha Ballabh Pant hospital. Int J Med Sci Public Health. 2014;3(8):911-5.
9. Siviroj P, Peltzer K, Pengpid S, Morarit S. Helmet Use and Associated Factors among Thai Motor-cyclists during Songkran Festival. Int J Environ Res Public Health. 2012;9:3286-97.
10. Gharaibeh ES, Abu Abdo AM. Assessment of traffic safety and awareness among youth in AlAhsa region, Saudi Arabia. J Emerg Trends EngAppl Sci. 2011;2:210-5.
11. Swami HM, Puri S, Bhatia V. Road safety awareness and practices among school children of Chandigarh. Indian J Commun Med. 2006;31:199.
12. Green RN, German A, Nowak ES, Dalmotas D, Stewart DE. Fatal injuries to restrained passenger car occupants in Canada: crash modes and kinematics of injury. Accid Anal Prev. 1994;26:207-14.
13. Kulkarni V, Palanivel C, Kumar N. Awareness and practice of road Safety measures among undergraduate medical students in a South Indian state. J Forensic Legal Med. 2012;30:1-4.
14. Janlert U. Motorcycle related maxillofacial injuries in a semi urban town in Nigeria: a four year review of cases in Irrua specialist teaching hospital, 2010.
15. Ratna HVK, Rajesh SS , Jayaram A, Rajanna MS, Venkatesh P, Iyengar K. Awareness and behaviour patterns regarding road safety measures among undergraduate students. Int J Community Med Public Health 2017;4:944-8.
16. Berg, H. (2006). Reducing crashes and injuries among young drivers: what kind of prevention should we be focusing on?. Injury Prevention, 12(suppl_1), i15- i18. http://dx.doi.org/10.1136/ip.2006.012062.