

Knowledge, Attitude and Practice Regarding Road Traffic Safety among Students

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Abstract

Background: Knowledge, attitudes and practice of road traffic regulations and safe driving have an important impact on RTA, few studies of India.

Aims: To study and analyse data of the current status of knowledge, awareness and practice about Road traffic safety among the students of age group between 18-25 years.

Materials and Methods: A cross sectional study was conducted among medical students of, Krishna Institute of medical sciences, Karad for a period of 2 months. 214 subjects were selected from students between the age group of 18-25 years.

Results: All 214 subjects in the study are medical students participated in study in the age group 18 – 25 years. Nearly 80% of the students said that they had adequate knowledge of road traffic regulations and more than one third (36%) mentioned that high speed was the most important cause of RTAs. 39.9 % students are aware of Good Samaritan Law. Importance of the use of seat belts, about 90% were strongly convinced of its importance, using seat belts, 38.7% felt convinced of its use. More than half of the students thought that the use of seat belts reduced the disabilities caused by RTAs. 98.1% students know it is compulsory to wear helmet but only 43.9% students actually wear it. 97.6% know it is against the law and safety to use mobile phones while driving but only 51% of students avoid it.

Conclusion: The knowledge and attitude of the members does not necessarily reflect into their practice. Hence, laws should be made more stringent and public should follow them in good faith.

Keyword: Knowledge; Attitudes; Practice; Road Traffic Regulations.

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Introduction

Accident is as an unfortunate incident that happens unexpectedly and unintentionally, resulting in damage or injury. Increased number of vehicles, drink driving, inadequacies of the road, over confidence, distracted driving, ignorance, increased speed of the vehicles and child restraints are the

commonest causes for increased road accidents. $\frac{1}{4}$ We have had great success in fighting disease that kill children. We can't now sit and watch people die or disabled due to injuries that can be easily prevented.

The 2030 Agenda for Sustainable Development recognizes that road safety is a prerequisite to ensuring healthy lives, promoting well-being

and making cities inclusive, safe, resilient and sustainable. The Decade of Action for Road Safety 2011–2020, officially proclaimed by the UN General Assembly in March 2010, seeks to save millions of lives by building road safety management capacity; improving the safety of road infrastructure; further developing the safety of vehicles; enhancing the behaviour of road users; and improving post-crash response.¹

Road traffic accident is a major public health problem in India. Every year the lives of approximately 1.35 million people are cut short as a result of a road traffic crash. Between 20 and 50 million more people suffer non-fatal injuries, with many incurring a disability as a result of their injury.²

Road traffic injuries are the leading cause of death for children and young adults aged 5–29 years. From a young age, males are more likely to be involved in road traffic crashes than females. About three quarters (73%) of all road traffic deaths occur among young males under the age of 25 years who are almost 3 times as likely to be killed in a road traffic crash as young females.²

In India, more than 70 per cent of fatal road crashes in 2017 involved adults in the 18–45 years age group, according to a report. As many as 1.47 lakh people died on Indian roads in 4.64 lakh accidents reported during 2017, the report by the Ministry of Road Transport and Highways said. Fatal road accident victims largely constitute young people in the productive age groups. Young adults in the age group of 18 – 45 years accounted for 72.1 per cent of victims during 2017. People in working age group of 18– 60 years accounted for a share of 87.2 per cent in the total road accident fatalities.³

Indian road deaths wipe out one city every year: To put the death toll due to road accidents in perspective – in the last one decade, the average annual road death crashes stand at 1.3 lakh per year – a figure that surpasses the population of many small Indian cities.⁴

Simple measures like awareness and practice of road safety measures can effectively reduce the impact of RTAs on the lives of people. Road safety deals exclusively with road traffic crashes – how to reduce their number and their consequences. Road safety aims to reduce the harm resulting from crashes of road vehicles and to convey information to road users to enhance their knowledge about road safety issues, influence their behaviour on the road and prepare them for new safety measures.⁵ Road safety-educated students will grow to be

leaders of communities forming opinions. The chances of road traffic accidents can be averted to a large extent, if these adolescents who are going to be adults of tomorrow are made aware of road safety measures. Adolescence is like a bridge between childhood and adulthood, during which the individual is gaining further physical maturity. The current study is planned to determine the knowledge of medical students regarding road traffic rules, their attitude toward them and their practices adapted towards road traffic safety. The study is conducted to assess the knowledge about road traffic rules and make the students conscious about their current awareness and fallacies regarding road safety and rules.

Our aim of study and analyse data of the current status of knowledge, awareness and practice about Road traffic safety among the students of age group between 18–25 years.

Material and Method

A cross sectional study was conducted among medical students of, Krishna Institute of medical sciences, Karad for a period of 2 months. The study subjects were selected from students of Krishna institute of medical sciences deemed to be university Karad, between the age group of 18–25 years.

Sample size: In a study conducted at S.N medical college Karnataka, knowledge regarding RTA in students was 15.9%⁵ Sample size was calculated using this as a prevalence, hence according to the formula $4pq/L^2$ (taking allowable error 5) the sample size was calculated to 214 students.

Inclusion criteria

1. Students between 18–25 years.
2. Both sexes.
3. Willing to give consent.

Exclusion criteria: Students who didn't give consent and students who were absent at the time of data collection.

Questionnaire filled by 214 medical students will be analysed. A questionnaire (closed type) is self-prepared regarding the road traffic rules. The questionnaire will be given to the subjects to fill. A pilot study will be conducted after obtaining orally informed and written consent from subjects.

The questionnaire consisted of personal data and background information followed by a knowledge questions, attitude scale and expressed practice

scale. The questionnaire consisted of questions scale categorized as: strongly agree, agree, disagree and strongly disagree. The study was approved by Institutional Ethical Committee and confidentiality of information and anonymity of subjects was maintained. The data was collected after obtaining the verbal consent of the subjects.

Data entry and analysis were carried out using Statistical Package of Social Sciences (SPSS). Student t-test and Chi-square test were used to test for significance when appropriate and (p-value was considered significant if it was less than 0.05).

Statistical Analysis: Data tabulated by using Microsoft office Excel. The data will be collected in pre-structured proforma and will be analysed using statistical package for social sciences (SPSS) version 20 and presented as descriptive statistics.

Result

All 214 subjects in the study are medical students. Most of the subjects are in the age group 18–25 years.

Most of the students are of 22–23 years age with equal male and female ratio, about one half of whom lived in the city (49%); Most of them had vehicle (60%) and 59 % had driving licenses.

More than one half of the students (53%) had been involved in RTAs; 24.7% out of these had been injured, More than 40% of them indicated that speed was the main cause of the RTA (Table 1).

Nearly 80% of the students said that they had adequate knowledge of road traffic regulations and more than one third (36%) mentioned that high speed was the most important cause of RTAs. 39.9% students are aware of Good Samaritan Law.

When asked about the importance of the use of seat belts, about 90% were strongly convinced of its importance. However, on the reasons for using seat belts, 38.7% felt convinced of its use. More than half of the students thought that the use of seat belts reduced the disabilities caused by RTAs (Table 2).

98.1% students know it is compulsory to wear helmet but only 43.9% students actually wear it. It was found out that 97.6% know it is against the law and safety to use mobile phones while driving but only 51% of students avoid it. Also 91.6% of students are aware about the speed limit but still 52.4% students over speed (Table 3).

Table 1: Socio-demographic characteristics and previous RTA related events of students.

| Details | Number of Subjects | Percentage |
|---|--------------------|------------|
| Age (in years) | | |
| 18–19 | 17 | 7.94392523 |
| 20–21 | 72 | 33.6448598 |
| 22–23 | 109 | 50.9345794 |
| 24–25 | 16 | 7.47663551 |
| Gender | | |
| Male | 105 | 49.0654206 |
| Female | 109 | 50.9345794 |
| Place of residence they belong to | | |
| Urban | 105 | 49 |
| Rural | 75 | 53 |
| Semi urban | 34 | 15.8878505 |
| Own a vehicle | | |
| Yes | 129 | 60.2803738 |
| No | 85 | 39.7196262 |
| Has a driving license | | |
| Yes | 126 | 59 |
| No | 88 | 41 |
| Exposure to previous RTA | | |
| Yes | 114 | 53 |
| No | 100 | 47 |
| Injured in RTA | | |
| Yes | 53 | 24.7663551 |
| No | 161 | 75.2336449 |
| Reason for RTA | | |
| High speed | 21/53 | 39.6226415 |
| Over taking another car | 16/53 | 30.1886792 |
| More than one reason | 11./53 | 20.754717 |
| Others | 5./53 | 9.43396226 |
| Death in relatives resulting from RTA in Past 10 years | | |
| Yes | 51 | 23.8317757 |
| No | 163 | 76.1682243 |

Table 2: Knowledge and attitudes of students on road traffic regulations and RTAs.

| Knowledge | No. of Students | Percentages |
|---|-----------------|-------------|
| Degree of knowledge about road traffic regulations on law | | |
| High | 63 | 29.4 |
| Moderate | 128 | 59.8 |
| Low | 23 | 10.8 |
| Reason for RTA(what student think) | | |
| Hight speed alone | 77 | 35 |
| Drivers lack of awareness of traffic regulation and law alone | 9 | 4.2 |
| Drivers non compliance with traffic rules and regulations alone | 12 | 5.6 |
| All the above reasons | 28 | 13.1 |
| More than one reason | 88 | 41.1 |
| Good Samaritan Act | | |
| Aware of act | 85 | 39.9 |
| Aware but ignored | 20 | 9.2 |
| Not aware | 109 | 50.9 |
| ATTITUDES | | |
| Convinced about the importance of seat belts | | |
| Very strong | 105 | 49.1 |
| Strong | 87 | 40.6 |
| Weak/very weak | 22 | 10.3 |
| Insistence on passengers use of seat belts | | |
| Always | 16 | 7.5 |
| Sometimes | 43 | 20.1 |
| Usually | 37 | 17.3 |
| Never | 112 | 52.3 |
| No respond | 6 | 2.8 |
| Reasons that make you use seat belt or helmet or safety measures | | |
| I like follow regulations | 21 | 9.8 |
| I am convinced with importance of safety measures | 83 | 38.8 |
| Seat belt/helmet has become compulsory practice | 46 | 21.5 |
| It is civilized phenomenon | 8 | 3.7 |
| More than one reason | 39 | 18.2 |
| No response | 17 | 7.9 |
| Effect of using seat belt or Helmet | | |
| Reduce incidence of RTA | 34 | 15.9 |
| Reduce disabilities caused by RTA | 125 | 58.4 |
| Reduce rate and complications of RTA | 8 | 3.7 |
| Not effect on the rate of disabilities | 26 | 12.1 |
| No Response | 21 | 9.8 |
| Reason for using Seat belt or Helmet | | |
| Drivers are afraid of punishment | 139 | 64.9 |
| Driver are convinced of the importance of importance of using | 14 | 6.5 |
| Positive impact of health education | 23 | 10.7 |
| More than one reason | 21 | 9.8 |
| No response | 17 | 7.9 |

Table 3: Practice of students concerning road traffic regulations and RTAs.

| Questions | Number of Students | Practice % |
|--|--------------------|------------|
| Driving License | 106 | 49.5 |
| Driving Training | 54 | 25.4 |
| Seat Belt | 114 | 53.2 |
| Helmet | 94 | 43.9 |
| Helping RTA Victim | 125 | 58.7 |
| Speed Limit | 102 | 47.6 |
| Rear View Mirror | 155 | 72.6 |
| Triple Riding | 118 | 55.1 |
| Traffic Intersection | 190 | 88.8 |
| Wrong Lane Driving | 101 | 47.3 |
| Earphones | 162 | 76 |
| Indicator | 143 | 67.1 |
| Overtaking From The Left Side | 80 | 37.5 |
| Passing Too Close Other Vehicles While Driving | 174 | 81.4 |
| Servicing (Vehicles) | 180 | 84.2 |
| Giving Way To An Ambulance In Emergency | 184 | 86.1 |
| Using Mobile Phone While Driving | 109 | 51 |
| Signal Jumping | 102 | 47.7 |
| Hazard Lights | 105 | 49.5 |
| Railway Crossing | 150 | 70.4 |

Discussion

Road traffic accidents are, to a great extent, preventable. The most effective way to reduce fatalities and injuries would be through an integrated approach involving close collaboration of many sectors. Progress is being made in many parts of the world where multisectoral strategic plans are leading to incremental reductions in the number of road accidental fatalities and injuries (Evans, 2003).⁷ Such strategies focus on four key factors that contribute to the risk of occurrence of a road accident – exposure, behavioural factors, road environment, and vehicle factors.

Road traffic awareness among school going adolescents is one of the most important aspect towards safety concerning traffic rules. The students in adolescence may derive a thrill out of taking risks on road not realizing the consequences such risks may have. This age group is rapidly emerging as a major population of vehicle owners and also constitutes major number of accidents, making it very important to sensitize this population about road traffic rules, as they are future of the nation.

In our study most of the students are of 22-23 years age. This finding is similar to the study done by Mahawar et al in Indore among school going teenagers and Kulkarni et al in south Indian states.^{8,9}

In present study equal number of males and females take part in which about one half of whom lived in the city (49%) coincides with study of Al-Khalidi YM showing 47% of students lived in city.¹⁰

Most of them had vehicle (60%) and 59 % had driving licenses and study done by Al-Khalidi YM showing more than two thirds had cars (70.6%) and 72% had driving licenses.¹⁰

More than one half of the students (53%) had been involved in RTAs; 24.7% out of these had been injured, More than 40% of them indicated that speed was the main cause of the RTA.

Studies show 54% had been involved in RTAs and 22% out of these had been injured and 13% had been admitted into hospital for 9.3 days and 50% indicated that speed as a cause of the RTA. where as in study conducted at Raichur College of Medical Sciences 55.4% students have an idea about the speed limit.¹¹

These findings were similar to those reported by many other investigators.^{12,13} About 23.8% of the students mentioned that they had lost at least one relative in a RTA in the previous ten years. This means that as reported by Ansari et al, the Saudi society has a major problem with RTAs.¹² Nearly 80% of the students said that they had adequate knowledge of road traffic regulations and more than one third (36%) mentioned that high speed was the most important cause of RTAs.

When asked about the importance of the use of seat belts, about 90% were strongly convinced of its importance. However, on the reasons for using seat belts, 38.7% felt convinced of its use. More than half of the students thought that the use of seat belts reduced the disabilities caused by RTAs.

A study from another medical college from India has shown 74% participants wearing the seat belts.¹⁴ Wearing a seat belt reduces the risk of a fatality among front seat passengers by 40-50% and fatalities of rear seat occupants by 25-75%.^{15,16} Mandatory seat belt laws, their enforcement and appropriate public awareness campaigning have been shown to be very effective in increasing rate of wearing seat belts 67% of study participants never use mobile phone while driving. Similar findings have been reported by Jogand S et al.¹⁷

In study done by Din Prakash Ranjan¹⁸ on adolescent students of a selected Pre-University

college in Raichur city, 97.8% and 99.4% participants knew that it is compulsory to put on the seat belt while in a moving car and wear helmet while travelling in two wheelers respectively. 55.4% respondents had correct knowledge on the correct speed limit for driving in the city, much higher than the studies by Swamy et al and Mahawar et al.^{6,8} Only 33.8% participants had correct knowledge of traffic lights. This finding was similar to the study done by Mahawar et al among school going teenagers in Indore.⁸ The inability to correctly identify the traffic lights need to be addressed immediately as road traffic accidents can be reduced drastically if the knowledge towards traffic lights improves.

Out of 214 students, only 39.9% of students know about Good Samaritan Act. The time has come to strictly enforce the implementation of speed limits both on highways and city roads. Lately, the fines imposed on violation of traffic rules have been greatly increased so as to curb road accidents and increase safety measure. In mix traffic environment, restriction on vehicle speed would also help in reducing casualties to pedestrians, cyclists, and other vulnerable road users.

In this study 51% reported using mobile phones while driving compared to 22.2% in the study conducted at S N Medical College and similar to Christopher et al of 21.7% but Kulkarni et al⁹ 44% participants and Reang 8.2% used mobile phones.¹⁴

Regarding earphones in our study 76% practised listening music as compared to 61.2% male and 38.8% female found in Agaratala Government Medical College.¹⁴

In our study 47.6% students practiced about the speed limit while driving where as in study conducted at Raichur College of Medical Sciences 55.4% students have an idea about the speed limit.¹¹

In our study 53.2% students practice that it is compulsory to put on seatbelt while driving similar that is 98.1% in study conducted by Stanley Medical College, Chennai.¹⁹

Indicator usage was always followed by 67.1% of students in our study compared to 78.7% in a study conducted at AIIMS College, Rishikesh.²⁰

About the fact that overtaking from left side is wrong only 37.5% practiced and 32.8% of Chennai Higher Secondary School and Raichur Institute of Medical sciences had the correct knowledge. Also is was found that 72.4% male and 27.6% female of Agartala Government Medical College overtook from left side as a habit.¹⁴

Behaviour of road users, the way people drive, cycle, or walk on the road, are the most common source of road injuries and fatalities. Factors such as age and experience of driver, alcohol and drug use, fatigue, acute psychological stress, and enforcement of traffic laws are the key determinants of accident and fatality risk.

Our study showed that 47.7% students obey all traffic signals compared to 66.7% found in a study conducted at AIIMS College of nursing, Rishikesh, Uttarakhand.²⁰

There is still a lack of acceptance among drivers that their choice of speed may increase accident risk not only for themselves but also for other road users. To reduce accident risk, there is a need to focus on changing the drivers' perception of speed risk.

The level of enforcement of traffic law and the severity of penalties for infringement also influence the behaviour of road users. Low levels of enforcement often negate the efforts made to improve road safety through legislation. Simply legislating is rarely effective without enforcement, education, and publicity campaigns to raise public awareness of the purpose of the legislation.

Therefore, a systems approach to road injury prevention, that is, using the legislation and law enforcement with the support of education, information, and publicity campaigns, needs to be adopted by the government to influence the behaviour of road users and consequently to reduce the rate of road accidents and related fatalities and injuries.

Most of the traffic accidents are caused by human errors. In 2013, drivers' fault accounted for 78% of total accidents, 76.5% of total injuries, and 73.7% of total fatalities in India. For this reason, road safety initiatives traditionally focus on 'fixing' the driver in order to prevent accidents. There is no doubt that the approaches involving road-safety education and enforcement such as wear your seat belts, always wear helmet while driving, say no to drunken driving, and general adherence to traffic rules are essential in curtailing traffic accidents, however, it is equally important to realize that people will always make mistakes. Therefore, there is a need to focus on mediating the outcome of accidents by designing safer vehicles and safer roads. It is indeed possible to protect the road user in the event of an accident by designing vehicles and roads to work together to ensure crash energies do not overwhelm the human. For vulnerable road users such as pedestrians, bicyclists, motorcyclists,

and those using informal public transport, road design must ensure that they are not exposed to high speed traffic (Singh, 2009).²¹ Therefore, roads should be designed in such a way so that it is not only self-explaining but also forgiving.

Conclusion

As per the above study conducted in Krishna Institute of Medical Sciences, Karad, majority of the students had good knowledge and appropriate attitude about Road Traffic Safety. However, good practice was seen only among more than 50% of participants.

The knowledge and attitude of the members does not necessarily reflect into their practice, which is unfortunate. Hence, laws should be made more stringent and public should follow them in good faith.

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