Attitude and behavior of medical and dental students towards driving in Punjab province of India

Abstract

Road traffic accidents are increasing with the increase in a number of vehicles and are likely to become one of the leading causes of death in the near future. This study has been done with the hypothesis that attitudes and behaviors towards driving can be predictors of road traffic accidents and losses due to accidents can be decreased if we control and modify the attitude and behavior of the drivers and the best time to modify is when the drivers are young. In this study, 225 medical and dental students in the age group of 17-22 years participated and it was observed that many of them were having dangerous driving behavior. In order to modify the attitude and behavior after knowing what is wrong in behavior and attitude of the young population who are driving or likely to drive shortly so that we can modify their behaviors according to the Theory of Planned Behavior.

Keywords: attitude, driving behavior, road traffic accidents

Introduction

Attitude is “a feeling or opinion about something or someone or a way of behaving that is caused by this.”1 Behaviour is “the way in which one acts or conducts oneself, especially towards others.”2 Attitude of the driver leads to different driving behaviors which make a person prone to accidents.3 Attitude determines the intentions which in turn mediate the perceived behavior control e.g. texting while driving,3 aggressive behavior and speedy driving is a factor for the proneness to accidents.4 Young drivers are more likely to meet accidents.3 Age affects driving behaviors and young drivers have more risky behavior as compared to the old drivers.4 and are more likely to violate traffic rules especially students4 and people mostly involved in fatal accidents are in the age group of 20-29 years.8 Risk in the young drivers may be affected by attitude of the individuals, environmental circumstances and psychologic of the persons.9 Drinking by young persons while driving especially in the company of other young persons and driving at high speed especially at night increases the chances of accidents.9 Males are more likely to meet accidents.1 Males are more prone to drunk driving as well as blue collared, administrative and sale workers are prone especially when enjoying at nightlife.10 Men have an attitude that they are better drivers than women and usually drive more distances than women but have more risky driver behavior,11,12 as they use fewer safety devices but the rate of accidents is almost equal in both the genders but there is less reporting by males.11 In another study on the contrary males are found to disobey laws less as compared to females.7 Being rich and female has negativity towards good driving behaviors.12 Being a student is associated negatively with the driving behaviors.10 Educational status and social status was not found to be responsible for accidents.4 Distracted driving is very common for the college students because of their higher self-confidence and their belief in multitasking. Voluntary risk-taking behavior increases the chances of accidents especially when they are driving for recreation.1 Driving during night also increases risk of accidents especially in young people.5 Speedy driving is one of the factors for accidents5 which may just be pushing or aggressive.13 Accidents may be by non-speeding behavior which usually involves aggressive violations, mobile use, and tailgating.14 For two-wheelers driving recklessly, taking the motorcycle through narrow gaps and overtaking on wrong sides are frequent violations who are driving two wheelers.15 For four-wheelers, if a person is alone in the vehicle is likely to commit more errors as compared to if more persons are traveling with the driver.15 Seat belt wearing, using mobile, signaling and keeping a safe distance from other vehicles are behaviors which can be a factor in accidents.15 Sensation seeking behavior results in more risky behavior acts.6 Speeding intentions reduced if speed enforcement messages were announced but there were no differences if radars or police officers were used to check over speeding and unknown speed enforcement stations were better as compared to fixed enforcement stations.16

Emotional control of the person can also change the driving behavior of a person and persons with poor emotional control may be impeded to take driving decisions to some extent.2 Mostly persons...
learn driving from parents and friends and number of persons taking coaching from driving schools is limited mainly for the reason that young people who need to learn are lacking financial resources for this training.\textsuperscript{18} Those with the attitudes of stronger control over themselves were more prone to drowsy driving especially amongst the students of the university.\textsuperscript{19} Communication campaigns have been designed are effective for improving the driving behaviors.\textsuperscript{20} Safety belt usage and do not drink and drive campaigns have been studied and a better result for seat belt usage was noticed as people were already convinced of not mixing driving and drinking.\textsuperscript{20} Different questionnaires have been used to assess the driving behavior namely Manchester Driver Behavior Questionnaire,\textsuperscript{13} 7-item Driver Behavior Questionnaire and traffic accident involvement,\textsuperscript{14} attitudinal questionnaire\textsuperscript{10} in different studies with advantages and disadvantages.

Material and methods

In this cross-sectional study participants were medical students and dental students. This is a survey-based study in which pre-structured survey which was pilot tested was used to find the attitude and behavior of medical and dental students towards driving based on the theory of planned behavior. It was a self-administered survey. A total of 225 students participated in this survey (n=225). All the participants were explained the contents of the survey and meaning of all the items. Verbal consent was taken from all the participants. They were given the choice to refuse to participate in the study. They were also given the choice to not reply to any item if they were uncomfortable to reply. The inclusion criterion was students of MBBS and BDS course and who were consenting. Exclusion criterions were students who did not consent or were above the age of 22 years. No monetary incentive was provided. The ethics committee of the institution approved this project.

Results

Participants in this study were mostly adults, females and from the urban area, as shown in Figures 1-3.

Figure 1 Age wise distribution of the cases.

\begin{table}[h]
\centering
\begin{tabular}{c|c|c|c}
\hline
Age & Below 18 years & Above 18 years & Not mentioned \\
\hline
Cases & 145 & 52 & 28 \\
\hline
\end{tabular}
\caption{Age wise distribution of the cases.}
\end{table}

(Table 1) 38.55% started driving vehicles below the age of 16 years when even license for two-wheelers without gears is not issued. 42.21% started driving four-wheelers when the license cannot be issued. (Table 2) 72% of the participants never joined any driving school. (Table 3) 61.77% of students issued driving license without any driving test. (Table 4) A sizable number of persons (35.11%) start driving even without a driving license. (Table 5) 8.44% students usually drive two-wheelers above the speed limit of 60 km. (Table 6) 15.09% students drive more than 60 km at a stretch. (Table 7) 18.66% students drive at a speed more than 70 km/hour routinely and 40.44% persons have occasionally driven at a speed of more than 70 km and 12.44% have occasionally driven at a speed of more than 90 km. (Table 8) 56.88% did not use safety helmets while driving or pillon riding. There were 11.11% persons who did not use rare seat belts as compared to 5.33% participants who did not use front seat belts. (Table 9) Only 49.33% of the participants tried to help the accident victims as police harassment still continues as observed in 6.66% of the cases. (Table 10) 2.66% drove vehicles after consuming alcohol. 40.88% participants have jumped red signals and 29.77% will stop definitely at red signals if they find traffic police at the crossings. 20.08% have been penalized by the traffic police and 26% have bribed the traffic police to avoid penalization. Only 36.44% participants follow the speed limits but to avoid injuries 83.55% slow down at the speed breakers. Only 76% use the light dippers at night and 81.77% use side mirrors to avoid accidents. 19.11% have parked in No Parking zones and in 7.55% of cases vehicle has been towed away. Racing on the road is a big challenge and 32% enjoy racing for a thrill. 15.11% of the participants admitted that they will cross the closed railway barriers at the crossings. (Table 11) As far as maintenance of the vehicle is concerned 88.88% of participants care for regular servicing of the vehicle and 93.77% take care of tires. 72.44% participants have regular pollution check of the vehicles. (Table 12) 40% of the participants had an accident while driving.

Figure 2 Gender wise distribution of the cases.

Figure 3 Area wise distribution of the cases.
### Table 1: Age when started driving vehicle

| Type of vehicle | Below 16 years | Between 16-18 years | Above 18 years | Total | Not mentioned | Total |
|----------------|---------------|-------------------|---------------|-------|--------------|-------|
|                | Numbers       | %                 | Numbers       | %     | Numbers       | %     | Numbers       | %     |
| Two wheelers   | 47            | 20.88             | 108           | 48    | 13           | 5.77  | 168           | 74.66 | 57            | 25.33 | 225           | 100   |
| Four wheelers  | 40            | 17.77             | 55            | 24.44 | 11           | 4.88  | 106           | 47.11 | 119           | 52.88 | 225           | 100   |

### Table 2: Joined any driving school

|                | Yes | No | Not mentioned | Total |
|----------------|-----|----|---------------|-------|
|                | Number | % | Number | % | Number | % | Number | % |
|                | 49   | 21.77 | 162   | 72 | 14   | 6.22 | 225   | 100 |

### Table 3: Driving test given by the authorities before issuing license

|                | Yes | No | Not mentioned | Total |
|----------------|-----|----|---------------|-------|
|                | Numbers | % | Numbers | % | Numbers | % | Numbers | % |
|                | 63   | 28 | 139 | 61.77 | 23 | 10.22 | 225 | 100 |

### Table 4: Possess driving license when you started driving

| License possession | Yes | No | Not mentioned | Total |
|--------------------|-----|----|---------------|-------|
|                    | Numbers | % | Numbers | % | Numbers | % | Numbers | % |
|                    | 130   | 57.77 | 79 | 35.55 | 16 | 7.11 | 225 | 100 |

### Table 5: Normally drive the two-wheeler vehicle at a speed (KM/Hour) of*

| Speed             | <40KM | 41-60KM | 61-80KM | >80 | Not mentioned | Total |
|-------------------|-------|---------|---------|-----|---------------|-------|
| Number            | 8     | 146     | 64.88   | 18  | 8             | 0.44  | 52    | 23.11 | 225 | 100 |
| Maximum speed     | 5     | 22.22   | 27      | 12  | 27            | 12    | 3.11  | 73    | 32.44 | 139 | 100 |

### Table 6: Driven 2 wheeler at a stretch

|                | <14km | 15-60km | 61-100KM | 100-150 KM | 151-200 | >200KM | NM | Total |
|----------------|-------|---------|----------|------------|----------|--------|-----|-------|
| Numbers        | 43    | 19.2    | 47       | 20.88      | 20       | 8.88   | 5   | 2.22  | 1.33 | 6   | 2.66 | 101 | 44.88 | 225 | 100 |

### Table 7: Normally drive the four-wheeler vehicle at a speed (KM/Hour) of*

| Speed             | <45KM | 46-70KM | 71-90KM | >90 | Not mentioned | Total |
|-------------------|-------|---------|---------|-----|---------------|-------|
| Number            | 6     | 2.66    | 46      | 20.44 | 35           | 15.55 | 7   | 3.11  | 131 | 58.22 | 225 | 100 |
| Maximum speed     | 1     | 0.44    | 29      | 12.88 | 28           | 12.44 | 28  | 12.44 | 33  | 14.66 | 119 | 100 |

### Table 8: Using safety devices when using/driving vehicle

| Using safety devices                  | Yes | No | Not mentioned | Total |
|---------------------------------------|-----|----|---------------|-------|
|                                      | Number | % | Number | % | Number | % | Number | % |
| Safety helmet while using two wheeler | 72   | 32 | 128   | 56.88 | 25 | 11.11 | 225 | 100 |
| Front seat safety belt                 | 167  | 74.22 | 12 | 5.33 | 46 | 20.44 | 225 | 100 |
| Back seat safety belt                  | 28   | 12.44 | 25 | 11.11 | 165 | 73.33 | 225 | 100 |
Table 9 Attitude towards road accidents

| Attitudes                      | Yes | No | Not mentioned | Total |
|-------------------------------|-----|----|---------------|-------|
| Witnessed road accident       | 132 | 81 | 12            | 225   |
| Tried to help victims         | 111 | 84 | 30            | 225   |
| Police harassment             | 15  | 171| 39            | 225   |

Table 10 Safety habits

| Safety habits                                      | Yes     | No   | Sometimes | Not mentioned | Total |
|---------------------------------------------------|---------|------|-----------|---------------|-------|
| Driving under the influence of alcohol*            | 6       | 106  | 47.11     | 113           | 50.22 |
| Jumped red signal                                 | 92      | 123  | 54.66     | 10            | 4.44  |
| Only stopping at red light if only traffic police present | 67      | 139  | 61.77     | 19            | 8.44  |
| Ever been penalized (challan)                     | 45      | 169  | 75.11     | 11            | 4.88  |
| Have you ever bribed to avoid challan              | 60      | 150  | 44.66     | 15            | 6.66  |
| Always follow speed limits                        | 82      | 72   | 32        | 36            |
| Slowdown at speed breakers                        | 188     | 3    | 1.33      | 13            | 5.77  |
| Use side mirrors                                  | 184     | 126  | 56        | 18.22         | 6.66  |
| Use dippers at night time                         | 171     | 9    | 12        | 4.44          |
| Parked vehicle in no parking area                 | 43      | 126  | 56        | 18.22         | 6.66  |
| Vehicle towed away                                | 17      | 188  | 83.55     | 20            | 8.88  |
| Do you like to race with other vehicles on the road for a thrill | 72      | 135  | 60        | 18            | 8.22  |
| Drive at late night hours                         | 48      | 135  | 60        | 14.22         | 4.44  |
| Do you cross the railway barriers when closed     | 34      | 166  | 73.77     | 6.66          | 4.44  |

Table 11 Maintenance of vehicles

| Maintenance of vehicles                          | Yes     | No   | Sometimes | Not mentioned | Total |
|-------------------------------------------------|---------|------|-----------|---------------|-------|
| Proper servicing of vehicle                      | 200     | 4    | 1.7       | 4.88          | 225   |
| Aware about tyre condition                      | 211     | 4    | 1.7       | 10            | 4.44  |
| Pollution control certificate                    | 164     | 43   | 19.11     | 8             | 225   |

Table 12 Ever had an accident

| Ever had an accident                            | Yes | No | Not mentioned | Total |
|-------------------------------------------------|-----|----|---------------|-------|
| Number %                                         | 90  | 77 | 34.22        | 225   |

Discussion

Only small efforts have been made to reform the college students from avoiding distracted driving. Aggressive driving violations were factors in Qatar but not in UAE, indicating different behavior patterns may be working in different countries. Development environment may also be responsible for provocation of traffic violations. Participants were concerned with the environmental pollution and better fuel efficiency as 72.44% of the participants had regular pollution check of the vehicles and it also helped to save the fuel. Persons especially young are more willing to shift to public transport especially if there is a countermeasure to check drinking and driving. Road safety behaviors help in remedial measures and formulation of the national policies for prevention of the accidents and the data analyzed in this paper will highlight the deficient factors which need correction for prevention of the accidents in Indian Scenario. For reducing accidents attitude of males and females will have to be taken into consideration while making the policies for prevention of accidents. There should be interventions for behavioral changes so that persons do not text while driving. Interventions are needed to check the sensation behavior of the drivers for reducing the accidents and such drivers should be provided knowledge as well as skills to control their anger and sensation seeking behavior. Suggests more penalties for those traffic violations which are likely to result in fatal accidents and

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should be severe than those likely to result in non-fatal accidents.⁷ Students are of the opinion that those laws which may have an impact on their driving privilege and increasing insurance cost for them may improve their behaviour.⁸ Intentions play a big role in the behavior of the students who read messages or text messages when they are driving and crash risk was related to the intentions.⁹ The best time to modify the behavior is student time and interventions at this stage can make lifelong changes in the attitude and the drive behavior.⁸

**Conclusion**

To prevent the accidents we will need to modify the behavior of the students by changing their attitudes by highlighting the behavioral factors responsible for accidents and we should engage the students to modify their attitude to driving and their driving behavior. It would have been better to study the use of cell phones also while driving as the use of cell phones while driving is also a cause of accidents.

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**Conflict of interest**

Authors declare that there is no conflict of interest.

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