

A Survey on Awareness of Road Safety among Drivers on Nh-1 between Panipat toll to Namasty chowk Karnal, India

Sumit Kumar

Geeta College Of Engineering, Panipat
Kurukshetra University

Abstract - Increasing number of road accidents coupled with increasing vehicle population means an increase in the number of aggressive road users resulting in incidence of road rage. Inexperienced drivers often experience anxiety due to their underdeveloped and declining skills, which influence their behaviour. To highlight the effectiveness of correct training on the drivers' performance, this research work was initiated at Traffic Psychological Laboratory in CSIR-CRRI. In this study, a purposive sample of two groups of 102 drivers was selected and they were administered the road sign test. Findings: The analysis of the data highlights that maximum level of awareness about road sign of driving on hill roads (89%), seat belts usage while driving (89%) the safe way of stopping during emergency (40%), safe place of parking the vehicle (39%) and road markings (27%). Overall, drivers have shown average and above average level of awareness 52% to 77%.

I. INTRODUCTION

The magnitude of road accidents and fatalities in India is alarming. This is evident from the fact that every hour there are about 56 accidents (about one accident every minute). Similarly, every hour more than 14 deaths occur due to road accidents i.e. one death in every 4 minutes [Source: morth.nic.in]. RTI are not seen as a major public health concern in India even though these contribute considerably to the disease burden [Dandona et al., 2005]. This is also highlighted by the scarce health research output on RTI from India [Dandona & Mishra, 2004].

It is relatively easy for people to get a licence without proper driving skills in India. Hence, emphasis on proper training of drivers through a proper driving licence system should be viewed as an effective way to increase traffic safety attitude.

The World report on road traffic injury prevention calls for governments to make road safety a political priority, and highlights recommendations with regard to policy, legislation and enforcement, and development of institutional capacity to improve road safety [Peden et al., 2004].

According to Kostyniuk et al., (2002) analyzed 34,244 Car-Car Crashes and 10,732 fatal Car-Truck crashes in which they analyzed main causes behind these accidents. The study Concluded that apart from other causes following human factors were responsible for accidents:

- Failing to keep lane
- Failing to yield right of way
- Driving in excess of speed
- Inattentiveness
- Car following too close was more likely found among male drivers
- Young drivers were found having drugs and alcohol more in comparison to older age groups which was one of the causes leading to accidents
- Ignorance of traffic control devices or law

1.0. Road User Behaviour and Knowledge

Preliminary studies of road-user behaviour [Jacobs et al., 1981] at traffic signals and pedestrian crossings indicated that road users tended to be less disciplined than in the United Kingdom. Table-1 shows that fewer drivers chose to stop for pedestrians on uncontrolled pedestrian crossings and, not surprisingly, fewer pedestrians made use of such crossings compared with the UK. Also, observations in Pakistan [Downing, 1985] demonstrated relatively high proportions of drivers crossing continuous "No Overtaking" lines (15%) and not stopping at stop signs (52%). A study conducted by CRRI [Sarin & Mittal, 1991] in Delhi among truck drivers revealed that only 11% truck drivers knew "No Overtaking Sign", 5% about "Right of Way" and around 90% of the truck drivers were found to be ignorant about the road signs, traffic rules and regulations that govern road users for safety. It was observed only 10% of the drivers had a correct understanding of 50% or more commonly met signs while only one percent exhibited 75% or more knowledge level. These results suggest that road safety measures such as road signs and markings are not self enforcing; they may be less effective unless they are properly enforced with enforcement and publicity campaign.

Poor road-user behaviour exhibited by drivers in some developing countries may be due to their lack of knowledge about road safety rules and regulations or their general attitude towards road safety matters. A study of drivers' knowledge in Jamaica, Pakistan and Thailand [Jacobs et al., 1981] indicated that there were only a few topics where a lack of knowledge was widespread. One such example was stopping distances where 87 percent of the drivers underestimated the distance required to stop in an emergency when travelling at 30 mph. Answering

questions on stopping and following distances also proved to be a problem for professional drivers in Cameroon and Zimbabwe [Downing, 1991], with truck and bus drivers unable to answer more than half the questions on driving knowledge and skills correctly. Other areas of driver behaviour, such as not stopping at pedestrian crossings, traffic signals and stop signs were found to be due to poor attitudes rather than poor knowledge [Kayvan Aghabayk et al., 2012].

A study conducted by Neelima Chakrabarty & Singh (1993) was based on the observance of drivers' behaviour at selected intersections in Delhi revealed that 13 to 37% drivers (of different vehicles) were observed jumping red lights at selected intersections in Delhi city. These results emphasize that poor attitude of the drivers can be modified up to some extent by proper enforcement procedures and effective publicity campaigns.

2. PRESENT STUDY

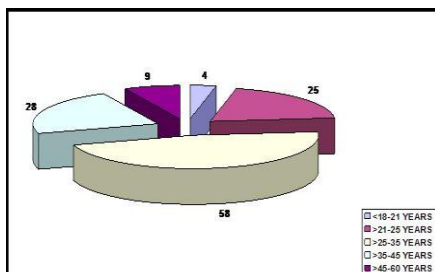
Present study was conducted on 102 car drivers on Panipat NH-1 highway for the purpose of ascertaining knowledge of Road Rules and Road Signs among them. In sample it is further divided into 76 drivers from Special Police Guard and 49 commercial drivers (taxi drivers). However, level of education and economic conditions were same in both the group. The main purpose was to compare the level of awareness between two groups regarding different Traffic Safety Rule and Road Signs. The questionnaire was prepared in English and Hindi languages. 30 minutes was the average time for asking up the questionnaire.

2.1. Distribution of Sample

The distribution of the sample was as follows:

2.1.1. Age Wise Sample Distribution

Maximum numbers of drivers were young and energetic as the largest group i.e. 58% drivers were falling in the age group 25-35 years followed by 35-45 years age group 28%. The older drivers i.e., between the age group 46-60 years were only 9% of the total sample population (Figure 1).



2.1.2. Education Wise Sample Distribution

According to the level of education 10% drivers were below matriculate, 52% drivers were matriculate 25% were educated upto high school and 13% were graduates. This sample distribution highlights that maximum number of drivers were only passed up to the 10th to 12th standards.

2.1.3. Driving Exposure Wise Sample Distribution

Maximum drivers were having driving experience of more than 20 years i.e. 48% followed by the 24% and 16% of 5 to 10 years and 10 to 20 years driving experience. While drivers having 2 to 5 years and up to two years driving experiences formed only 7% and 4% of the total sample population. This showed that maximum number of drivers were well experienced drivers not the new ones.

2.2. Findings of the Present Study

2.2.1. Awareness Levels of the Drivers Related to Various Road Signs and Road Rules

For this "Traffic Safety Questionnaire" was especially designed consisting of 20 multiple choice questions which has been shown as following (Table 1).

S. No	Contents	Drivers were aware	Drivers were not aware
1	Awareness about vehicles registration documents and type of vehicle to be used	66	34
2	Awareness about maintaining Minimum distances between Two cars while driving	52	48
3	Awareness about parking place	39	61
4	Awareness about drinking Driving	69	31
5	Awareness about seat belt Usage	89	11
6	Right of way of vehicle While driving on hills road	89	11
7	Awareness about white continous Or broken lines	27	73
8	Awareness about left lane On road	52	48
9	Awareness about starting the Vehicle on road during High traffic volume	66	34
10	Safety awareness for pedestrians During rainy seasons	52	48
11	Awareness about right way of Using horns	58	42

12	Awareness about right way of Emergency stopping	40	60
13	Awareness about controlling Speed while descending	82	18
14	Awareness about use of Hazard lights	57	43
15	Awareness about use of Mobile while driving	77	23
16	Road sign major road ahead	57	43
17	Road sign about steep decent	84	16
18	Road sign about give way	61	39
19	Road sign about vehicle Prohibited on both direction	74	26

Drivers were found much aware about the seat belts usage while driving (89%) but they were not much aware about the safe way of stopping the vehicle during emergency while driving on road (40%), safe place of parking the vehicle (39%) and knowledge regarding road markings (27%). Overall, drivers have shown average and above average level of awareness 52% to 77% on rest of the questions as mentioned in the table 1.

2.2.2. Effect of Road Safety Training on Awareness Levels of Drivers

It has been experienced all over the world that the countries which are undergoing increasing and rapid motorization face proportionately higher number of road accidents.

At the earliest stages of road safety development, little or no safety awareness may exist and efforts will first need to be made to enhance the awareness of key decision-makers to the scale and nature of the problem and the actions that are necessary to alleviate the situation.

The situation in India is somewhat better than a country, which may be at the earliest stage of safety development but still far less satisfactory than those countries, which have proven records of road safety improvements.

Awareness about various road safety rules and road signs, first aid methods and techniques that enhance practices related to the prevention, the preparedness and the immediate response to health emergencies should be provided not only in relation to road safety, but also in the household, workplace, and recreational areas.

This increases the social responsibility of the society and strengthens humanitarian values.

Table 2 – Showing Awareness Regarding Road Rules and Road Signs among Drivers of Different Educational Levels

S. No.	Different Education Levels of Drivers	Percentage of Awareness
1	Below Matriculate	56
2	Matriculate	86
3	High School	64
4	Graduates & Post Graduate	57

Table 3 – Summary: Analysis of Variance for Awareness of Road Signs and Road Rules of Secondary Vs. Higher Secondary Levels

$$*F(1, 8) = 127.1, p < 0.01$$

Source of Variation	df	Ss (Sum of Square)	Ms. (V)	F	Level of Significance
Between Means	1	1500.6	1500.6		
Within Classes	8	94.6	11.8	127.1	< 0.01

II. THE MITIGATIONS MEASURES INITIATED BY CRRI FOR THE TRAINING OF DRIVERS

3.1. Through Education and Enforcement

- Research team has developed an educational film on “No Mobile When Mobile” to highlight the causes of distracted behaviour among drivers and the way to control distracted driving.
- CRRI research team working in various training programmes to find effective interventions for reducing aggressive driving. CRRI Cooperative programs with Delhi police in various aspects were found to be effective.
- CRRI participated in Road Safety and Anti Aggression campaign organized by Delhi Police to understand the mechanisms underlying young drivers' risk-taking behaviour. The goal such campaign was to bring about a change in the students and social climate so that normative behaviour of children is constructive. Various school

students and learner drivers participated in the campaign. In the workshop a website www.navchetna.com was launched. The prior objective of launching such website was to inculcating traffic safety attitude and non aggressive behaviour among youngsters through different processes e.g. CRRI research team is interacting with the different experts for solving learner drivers' problems & helping in research for identifying causes and mitigation of aggressive behaviour through this network [Sayer et al., 1997].

3.2. *Behaviour Scanning and Modification Programme Through Aggression Management and Training Workshop*

CRRI participated in aggression management workshop organized in Lady Irwin College by TrafficZam.com, website www.trafficzam.com for training related to aggression management practices on the road.

CRRI highlighted various causes of aggressive driving incidences and highlighted to avoid such conditions through safe and calm attitude. CRRI also provided practical simulation practices among the students to show the after effect of aggressive driving and stress on human health.

This type of intervention is useful for those drivers who do not have any record of long time driving offences. Young drivers were taught to control the Level of frustration and avoid becoming a victim of aggressive driving by

- Reducing stress and fatigue on the road
- Regular maintenance of the car
- Taking journeys in easy stages
- Acquiring knowledge about road signs and road rules
- Knowledge regarding first aid

3.2. *Research Initiative Taken and Planned for Further Mitigating Aggressive Driving*

CRRI is doing a collaborative project work on indentifying aggressive attitude among college students riding two – wheelers with Dept of Mental Health & Social Psychology, NIMHANS and Bangalore.

4. CONCLUSION

From this study it is concluded that with the better trainings of the learner drivers and testing techniques for issuing the licence will reduce number of accidents. Awareness program on road safety from the student level will also assist in reducing the accidents at all levels.

5. RECOMMENDATIONS

Though the government has directed attention to awareness programs, it needs to collaborate state transport departments and traffic police, which are the local licensing and enforcement authorities, into conducting testing and training programs if some measure of success is to be found in reducing the number of road casualties. Important aspects of road safety, e.g. knowledge of traffic rules, regulations and road signs, punishment to drivers violating traffic rules and speed limits, driving under the influence of liquor or drugs (or using mobile phones while driving) and the elementary mechanism of vehicle and driver fitness and upgrading the quality and instructions need to be built into the program imparted by motor driving schools [Neelima Chakrabarty et al., 2012].

This paper also makes specific recommendations for road safety interventions and provides guidance to various stakeholders in road safety to improve road safety in India which is as following:

- Improvement in driver training field necessitates new concepts and training procedures, including a high and uniform level of training for driving instructors. It is urgently needed to establish Driver Training and Testing Group which will monitor the licensing process and upgrade this system time to time.
- A secured NATIONAL DATA BANK should be developed. Make better use of the available data, increase the comprehensiveness of road crash data and improve the technical capacity to analyse data, identify issues, and implement evidence based solutions to better understand the factors that result in road crashes and the impact they cause to plan appropriate prevention strategies.
- Penalty, traffic law enforcement per se needs to be made more visible, as the perception of a likelihood of being caught is a much stronger deterrent than the severity of penalty [Dandona et al., 2005A; Ashish Verma et al., 2011]. Increasing the penalty for traffic law offences was also recommended.
- Make road safety a political priority, and highlights recommendations with regard to policy, legislation and enforcement, and development of institutional capacity to improve road safety [Peden et al., 2004].

Ensure that legislations to improve road safety reflect the interests of road users who are most vulnerable to RTI.