Assessment of Traffic Safety and Awareness among Youth in Al-Ahsa Region, Saudi Arabia

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Abstract
Due to the importance role of traffic regulations knowledge and awareness in the reduction of traffic accidents, especially among the youth, this study was initiated to assess the traffic regulations knowledge and awareness of university and high school students in Al-Ahsa region, Saudi Arabia. To meet the objective of this study, a survey was designed and distributed to students at King Faisal University and selected high schools in the region. The total number of participants was 1007 with the majority of participants between 15 to 19 years old. Data had shown that a low percentage complied with traffic regulations and the use of seatbelts. A relatively high number of participants lacked the knowledge of important traffic signs, especially signs designated for yielding to traffic and pedestrians, which could be one of the major reasons for the high rate of accidents in the region in combination to excessive speeding. Furthermore, participants agreed that TV programs would be the best method for promoting traffic awareness. In spite of the high usage of the internet by youth, the internet was considered the least effective method. In conclusion, this study showed that youth in Al-Ahsa region had the knowledge of wrong driving practices, but they lacked it in traffic regulations and signs. Therefore, it is recommended that the traffic regulations and safety awareness start at an early stage and age, through TV programs and school activities. In addition, knowledge of traffic signs should be emphasized with the increase of the enforcement of traffic regulations.

Keywords: traffic awareness, traffic safety, traffic survey, traffic accidents, youth, al-ahsa, saudi arabia

INTRODUCTION
Traffic Accidents continue to inflict severe health and economic repercussions worldwide. Despite major efforts to improve traffic safety, traffic accidents have increased steadily through the last three decades [Koushki et al. (1999) and Traffic General Directorate (2003)]. Statistics for the year 2009 showed that traffic accident fatalities were 1.2 million worldwide and 6458 deaths in Saudi Arabia alone. As for injuries, there were 50 million worldwide and 36489 in Saudi Arabia. Further, it was found that around 18 deaths and 100 injuries occur daily in Saudi Arabia. It was estimated that the annual cost of traffic accidents in Saudi Arabia exceeds 6 billion US dollars [Al-Saif (2010)], in addition to other social, health, and economical impacts, such as disability, rehab, and unemployment due to traffic accident injuries.

It has been reported [Teasdale (1995) and Ministry of Health (1995a and 1995b)] that 81% of deaths in the Ministry of Health Hospital were as a result of traffic accidents and one fifth of hospital beds were occupied by traffic accident casualties. Unfortunately, these numbers might be higher, earlier study by Koushki and Balghunaim (1991) found that approximately 60% of accidents in Saudi Arabia were not reported due to multiple reasons. Even though, Saudi traffic laws and regulations state that it is compulsory to report any type of traffic accident. Several Studies [Tamimi et al. (1981), Nafee and Al-Saif (1986), Jadan et al. (1992), Al-Ghamdi (2003), Bendak (2005), Koushki and Bustan (2006), and Chung and Wong (2010)] indicated that the majority of traffic accidents could be contributed to drivers and road users characteristics. Nafee and Al-Saif (1986) observed that drivers were directly responsible for about 85% of the total accidents in Saudi Arabia, where Tamimi et al. (1981) concluded that drivers between 18 to 40 years of age were involved in approximately 65% of traffic accidents in Asir region, Saudi Arabia, with more than 90% of young adult in the gulf region owned vehicles [Koushki and Bustan (2006)]. Furthermore, Ansari et al. (2000) stressed that causes of traffic accidents in Saudi Arabia fell in two categories: general and specific causes. General causes included a large increase in vehicles, expansion of road networks, large national development projects, and increase number of foreign workers. On the other hand, specific causes included driver errors, excess speed, violation of traffic signals, and road and vehicle safety conditions. Badawi et al. (1995) argued that in addition to the previous causes, age of the drivers, the use of seatbelts, and the education level of drivers were important as well.
Most studies stressed on the necessity of public awareness and education campaigns, and strict law enforcement strategies [Badawi et al. (1995), Al-Zahrani et al. (1994), Al-Gamdi (2003), Bendak (2005)]. Al-Zahrani et al. (1994) argued that traffic accidents number and severity could be reduced by utilizing the 3E’s solutions; Engineering, Education, and Enforcement.

OBJECTIVE
Due to the importance of traffic regulations knowledge and awareness in reduction of traffic accidents, especially among the youth, this study was initiated to investigate and evaluate the traffic regulations knowledge and awareness of university and high school students in Al-Ahsa region, Saudi Arabia.

METHODOLOGY
To meet the objective of this study a survey was designed and distributed among students at King Faisal University and selected high schools in Al-Ahsa, Saudi Arabia. The survey was designed in three sections, the first section included questions on the participant information (e.g. age, education level…etc), the second section evaluated the driving behavior and practices, and finally the third section assessed participants’ traffic regulations knowledge and awareness.

DATA ANALYSIS AND DISCUSSION
More than two thousand questionnaires were distributed among selected university and high schools students. The return rate was around 50%. The total number of participants was 1007 and the average age was 21.5 years. Even though, this survey was directed to the youth, few graduate student instructors, and parents had contributed to this study as well. As shown in Table 1, the majority of participants were in the age groups of 15 to 19 and 20 to 29 years, with 70.4% and 18.9% of the total number of participants, respectively. Figure 1 illustrates the level of education of participants, with 48.41% high school students and 50.97% university students.

Table 1: Age Groups for Participants

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 15</td>
<td>0.3%</td>
</tr>
<tr>
<td>15 – 19</td>
<td>70.4%</td>
</tr>
<tr>
<td>20 – 29</td>
<td>18.9%</td>
</tr>
<tr>
<td>30 – 39</td>
<td>8.3%</td>
</tr>
<tr>
<td>40 - 50</td>
<td>1.9%</td>
</tr>
<tr>
<td>&gt; 50</td>
<td>0.2%</td>
</tr>
</tbody>
</table>

Data indicated that the majority of participants (82%) owned a vehicle, and 37% of vehicle owners had full coverage vehicle insurance, 45% had third-party insurance, and high percentage of 18% did not have any type of coverage (Figure 2-a). Furthermore, as shown in Figure 2-b, 50% of participants, did periodic vehicle maintenance, 40% occasionally, and small percentage of 9% rarely did not have any type of vehicle maintenance, which showed high level of awareness of measures of vehicle safety by participants.

Figure 3 indicates a high percentage of participants (70%) were involved in accidents as drivers, with 55% were involved in one to two accidents and 15% have taken part in at least three accidents. Also, Figure 4 demonstrates a staggering percentage of 78.9% of participants were involved in their first accidents at the age of 15 to 19 years old, while 0.6% had their first accident when they were younger than 10 years old.
Figure 3: Involvement in Vehicle Accidents

Figure 4: Age Group at First Accident as a Driver

Furthermore, Figure 5 summarizes some of the important participants driving practice and behavior. A very low percentage of 26% of participants fully complied with speed limits, 82% fully complied with traffic signals, only 12% always used seatbelts, and 13% stopped driving when feeling tired or fatigued. High percentage of 85% used mobile phones during driving, while only 7% of these participants always used free hands mobile phone devices. Astonishingly, when participants’ knowledge of traffic signs was tested, a relatively high number of participants did not know the correct answers, even though the percentages seemed low when translated to actual numbers. The number of participants who did not know major and important traffic signals was staggering. As shown in Figure 6, 10 to 15% did not know what Stop, Merging into a Main Street, Do Not Pass, and School Crossing Zone Signs meant, while 20% did not know Do not Enter Sign. In addition, a high percentage of 46% of participants did not have a clue what a Yield Sign means. Combining this information with the low percentage of complying with the speed limits could be the main cause of the high rate of traffic accidents and fatalities in the region.

Figure 5: Participants Driving Practices
Data from the awareness section of the survey showed that a high percentage of participants were knowledgeable of wrong driving practices. When asked to rank the main causes of accidents, excessive speed came first, then lack of attention, incompliance with traffic regulations, stunts, and finally lack of experience (Figure 7). Even though, the majority of participants were within the age group of 15 to 19 years old (Table 1), their answers showed that 48% indicated that they were the most age group responsible for accidents, as shown in Figure 8.

Figure 6: Participants’ Traffic Signs Knowledge

Figure 7: Main Five Causes for Accidents

Even though, a very low percentage of participants (13%) always used seatbelts (Figure 5-e), the majority of participants recognized that using seatbelts had a high impact on accidents severity, as illustrated in Figure 9, 50% of participants thought that it played a major role in reducing accident severity and 44% noted that it had an intermediate effect. Similar to seatbelt use, participants expressed that using mobile phones while driving had an effect on the number of accidents, only 9% thought that it had no effect (Figure 9-b), which coincided with ranking lack of attention as the second main cause for accidents as indicated in Figure 7.

Figure 8: Age Group Responsible for Most Accidents

Figure 9: Effects of Using Seatbelts and Mobile Phones on Accidents

Finally, when the best awareness methods of traffic knowledge were assessed, Figure 10 demonstrates the importance of several methods of traffic knowledge according to participants. The majority of participants (41%) agreed that TV programs would be the best method for promoting traffic awareness, followed by school activities (20%), lectures and workshops (14%), flyers (10%), radio programs (8%), and finally via the internet (7%). In spite of the high usage of the internet by youth in the kingdom,
participants agreed that using the internet for promoting traffic regulations and safety awareness was the least effective method. This might be contributed to the nature of the internet use in the region, where it is mainly used for entertainment and communication purposes, not as an educational channel.

Figure 10: Effective Methods for Increasing Traffic Awareness

SUMMARY AND CONCLUSIONS
Due to the importance role of traffic regulations knowledge and awareness in reducing traffic accidents, especially among the youth, this study was initiated to assess the traffic regulations knowledge and awareness of university and high school students in Al-Ahsa region, Saudi Arabia. To meet the objective of this study a survey was designed and distributed among students at King Faisal University and selected high schools in the region.

The survey was designed to have three main sections; participant information, driving practices, and finally traffic regulations knowledge and awareness assessment. The total number of participants was 1007 and the average age was 21.5 years. The majority of participants were between 15 to 19 years old.

Data had shown that a very low percentage of 26% of participants fully complied with speed limits, 82% fully complied with traffic signals, and only 12% always used seatbelts, and a high percentage of 85% used mobile phone during driving. Surprisingly, a relatively high number of participants lacked the knowledge of important traffic signs, especially signs designated for yielding to traffic and pedestrians, which could be one of the major reasons for high rate of accidents in the region. Data from the awareness section of the survey showed that a high percentage of participants were knowledgeable of wrong driving practices, excessive speed was ranked as the first cause, then lack of attention, incompliance with traffic regulations, stunts, and finally lack of experience. Although the majority of participants where within the age group of 15 to 19 years old, the survey showed that it was the most age group responsible for accidents. Finally, participants agreed that TV programs were the best method for promoting traffic awareness, in spite of the high usage of the internet by youth in the kingdom, the internet was considered as the least effective method.

In conclusion, this study showed that the participants had the knowledge of wrong driving practices, but lacked it in traffic regulations and signs. Therefore, it is recommended that traffic regulations and safety awareness start at an early stage and age, through TV programs and school activities. In addition, more emphasis on the knowledge of traffic signs is needed in the driving license exam and to step up enforcement of traffic regulations by the authorities.

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REFERENCES


