

A Statistical Study on Young UAE Driver's Behavior towards Road Safety

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Abstract—Road safety and associated behaviors have received significant attention in recent years, reflecting general public concern. This paper portrays a statistical scenario of the young drivers in UAE with emphasis on various concern points of young driver's behavior and license issuance. Although there are many factors contributing to road accidents, statistically it is evident that age plays a major role in road accidents. Despite ensuring strict road safety laws enforced by the UAE government, there is a staggering correlation among road accidents and young driver's at UAE. However, private organizations like BMW and RoadSafetyUAE have extended its support on conducting surveys on driver's behavior with an aim to ensure road safety. Various strategies such as road safety law enforcement, license issuance, adapting new technologies like safety cameras and raising awareness can be implemented to improve the road safety concerns among young drivers.

Keywords—Driving behavior, GLDS, road safety, UAE drivers, young drivers.

I. INTRODUCTION

To tackle road safety issues, individual differences play a role in safe driving performance such as age, gender, personality, risk perception and some medical conditions have been shown to be associated with varying risk of road accidents. Therefore, regardless of efforts by organizations to manage work-related road safety, perhaps through training, risk assessment, or provision of guidance for safe driving, some individuals are more likely to exhibit safe driving behavior than others. However, young drivers are the most vulnerable drivers on the road and have a higher level of crash involvement during their early driving days. The World Health Organization (WHO) 2002 report shows that in 2002, traffic crashes were the second largest cause of death for persons of aged 15-29 years [1]. In 2004, about 8,500 young drivers lost their lives in Organization of Economic Cooperation and Development (OECD) countries [2].

Statistical data collected in the US show that more than 2,500 teenage drivers in the age group 16-19 years are killed in road accidents, and that around 300,000 require medical attentions every year. This is an alarming scenario, considering seven young people are dying every day in traffic accidents. People in the age group of 15 - 24 years add up to 14% of the US population, yet the expanse for the accidental injuries caused by this age group is nearly 30% for male and

28% for females [3].

In the United States, the fatal crash rate per mile for teenagers (ages 16-19 years) is nearly three times of the drivers aged 20 years or older. Although teenagers drive fewer miles than older drivers, the risk of crash is the highest. A survey report from 2012 by AT&T shows that 97% of teenagers reported texting while driving was dangerous and 75% reported it as very dangerous. And shockingly, 43% of the same teens reported texting and driving anyway [4].

A traffic safety survey by AAA foundation found that 35% of those aged 16-18 years reported reading a text message while driving, and 27% admitted to writing/sending a text. Moreover, approximately 8% of young drivers in that study believed it was acceptable to text and drive [5].

Another study by Olsen et al. reported that teenagers who text while driving are more likely to drink and drive, ride with a drunk drivers and not always wear a seatbelt [6].

In March, 2015 an online survey was conducted in the metropolitan area of Richmond, Virginia. The survey reveals that among 223 teens, 94% said they knew texting while driving is dangerous and 93% knew it was banned in Virginia. Despite the known dangers, 58% was engaged in this behavior. Those who text and drive believe that their driving is unimpaired by using mobile phone while driving [5].

About 65% of driving experts in Europe have an idea about the young drivers, that they are heedless about the aftermath of accidents, on top of that, 62% assume that inexperience leads to carefree driving. Furthermore 51% says that the young drivers think they are not vulnerable to accidents [7].

Saudi Arabia is ranked as second for road traffic accidents in the Gulf region [1]. In Saudi, 14.8 persons per 1,000 vehicles were killed in 2004 compared with 1.5 in the UK. Traffic accidents are the primary cause of death among young adults, with 49% of deaths being of people under 30 years old [8]-[10].

This paper will discuss about young UAE drivers attitudes for following the safety rules. Unfortunately, limited research has been conducted so far to study the behavior of young UAE drivers. In this research, statistical data obtained from different government and private authorities will be used. After analyzing the data, safety measures initiated from the government authorities will also be discussed and more safety points will be proposed.

II. ACCIDENT RECORDS OF YOUNG UAE DRIVERS

Young drivers aged between 17 years to 26 years are more prone to die in a car accident than aged driver. The first few years on the road are very crucial for young drivers. Though

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the UAE stands in a good position for young driver's safety on the road compared to their counterparts in Europe and North America, yet the number of fatalities that occurred by young drivers are quite alarming. A report published by Gulf News states that, around 63% of all traffic accidents in UAE during 2015 were caused by individuals aged 18-35 years. The percentage of deadly fatalities for the same age group for the same time frame was 34%. Dubai Police declared a statistical statement, that more than one-fifth of accidents in the Emirates were induced by young adults aged 18-25 years [11].

To analyze the behavior of young drivers, some statistical data obtained from government and private survey are presented below.

A. Statistical Data from Ministry of Interior, UAE (MOI)

Every year thousands of new young drivers are getting new license and it has an increasing trend over the years. Table I represents the data obtained from MOI for driving licenses issued by different age groups for 2012 and 2013 [12]. From Fig. 1 it is evident that more young drivers are hitting the road every year compared to aged drivers.

TABLE I
DRIVING LICENSES ISSUED BY AGE GROUP FOR 2012 AND 2013 (MOI DATA)

Year	17-21	22-26	27-31	32-36	37-41	42-46	Above 46
2012	12,142	27,354	33,898	21,380	11,847	6,516	6,288
2013	12,874	30,603	38,962	24,559	13,496	7,280	7,066

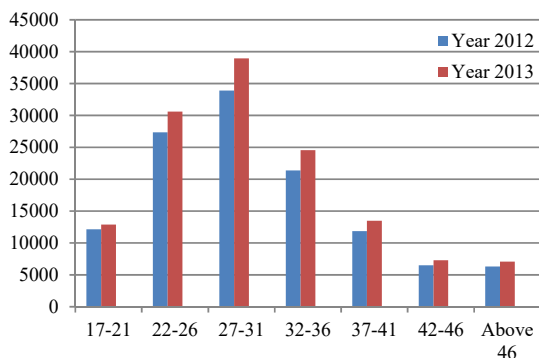


Fig. 1 Comparison of driving licenses issued by age group for 2012 and 2013 (MOI Data)

The risk factor for young drivers is the highest in terms of road safety. As per the statistical data of MOI, young drivers were responsible for 45% of all the accidents that occurred. Considering Abu Dhabi, this figure increases to 63%, in which 34% lead to death in road accidents.

According to MOI the main cause of accidents within this age group are over speeding, using mobile phones while driving, and not keeping safe distance between cars [13].

B. Statistical Data from RoadSafetyUAE

RoadSafetyUAE is a private organization which promotes awareness to mitigate road traffic disasters by reducing the number of road accidents in the UAE and is recognized by more than 30 governmental institution and corporation. Over the years it has conducted and published many survey data to

analyze the road safety condition in UAE. Their survey on young drivers (18-24 years) reflects some vital concern points. Some selected points from the survey results are mentioned below [14].

TABLE II
SURVEY RESULT ON YOUNG DRIVER'S BEHAVIOR TOWARDS SAFETY

Concern points	Percentage
Using Seatbelt while driving	63%
Using Seat Belt on the front passenger seat	52%
Using seat belt on the back seat	7%
Ask the passengers to use seat belt	34%
Not using mobile phone while driving	29%
Always using indicator	56%
"Running late" as a reason for speeding	72%
"Showing off /To impress" others as a reason for speeding	55%
"I know the radar location" as a reason for speeding	53%

Results from the latest survey conducted by Qatar Insures and RoadSafetyUAE in February 2016 declare that in the last six months, about 28% of individuals aged between 30-34 years were involved in an accident. Likewise, another survey group admitted that they received tickets for speeding or traffic fines in the past six months. Whereas only 12% of the individuals in the survey group aged between 18-24 years declared involvement in road accidents in the last six months and only 7% reported implications of fines due to traffic rule violations [15].

C. Statistical Data from BMW Survey

BMW Group Middle East is a private organization which is simultaneously supporting the UAE authorities to study the behavior of young drivers. In November 2013, they conducted a nationwide study undertaken by more than 3,000 young male and female students from universities within the age group of 18-23 years. This survey has revealed alarming findings on the use of seat belts while driving for young drivers. Of all the respondents, one third of them said they always wore seatbelts. The percentage of people involved in car accidents is 44%, out of which 72% said they use seat belts "only sometimes" or "never at all" [16].

In another question on whether the seat belt keeps them from harm, a shocking 85% of students believe that it does not help that much, where as a WHO report published that wearing a seat belt reduces the risk of fatalities for front-seat passengers by up to 50% and rear seat passengers by 75%. Three quarters of the respondent explained they simply forgot or felt uncomfortable behind their not wearing a seatbelt. Surprisingly, 54% of the students surveyed believe a seat belt is necessary only for the driver. While 75% of the students said they do not ensure if all passengers are wearing seat belts or not [16].

D. Statistical Data from Newspaper Article

The National published an article in July 2016, which emphasized on the attitude of young drivers towards risk taking and also mentioned about the immaturity of brain development among individuals aged below 24 years.

Statistical data issued by the Sharjah police illustrate that drivers in the age group 18-30 years were involved in more than 44% of road fatalities in the Emirate during the Jan-May 2016 period. Accident records of the same age group also verify the same, where the number is 434 out of 970 accidents, and among them, 159 involve deaths, major injuries for around 350 and minor injuries for 375 people [17].

Another article published in *The National* on April, 2016 describes that most of the deaths on the road in that year occurred as the result of motorist aged between 22 years and 30 years. Data presented by the General Department of Traffic showed that drivers in this age group were involved in road accidents which caused the death of 21 people in Dubai. The number of deaths resulting from drivers of the same age group in 2015 was 67 in various incidents [18].

A report published in *Khaleej Times* in November 2015 presents the survey results conducted by Abu Dhabi Police which states that 53.5% of the capital's driving population is aged between 18 years and 30 years and 34% of fatal accidents were caused by young drivers in 2017. Medical experts are also concerned about the safe driving behavior of young drivers, as the number of deaths is higher for accident victims than those with the critical diseases like cancer [19].

An article, published in *The Arabian Post* in September 2017, presents that 45% of all traffic accidents were caused by motorist aged between 18 years and 30 years. Spokesman and Secretary of the Ministry of Interior Lt. Gen. Saif Al Shafar states that the main cause for accidents within this age group are speeding, using phones while driving and not keeping safe a distance between cars [20].

III. ROAD SAFETY INITIATIVES FOR YOUNG DRIVERS

It is evident that young drivers are more in danger when it comes to road safety. Proper action must be taken to address the problem. Luckily, the UAE government and many private organizations are working together and have taken many steps to reduce the risks. Initiatives taken by the different authorities are discussed below.

A. UAE Government Initiatives

The UAE government has amended its federal traffic law No. 21 1995, as per Ministerial Resolutions 177 and 178 of 2017 regarding license issuance and renewal and new traffic control rules and procedures [21]. Under this amendment, the first ministerial Resolution No. 177 for 2017 regarding issuing and renewing a driver's license sets several stipulations as the following:

- The initial driving license validity for people aged 21 years or over is two years and below that is one year for all.
- After renewal of any driver's license, validity is 10 years for citizens and five years for other nationalities.

Under this act, a new driver has to go through a tough process which will evaluate their driving behavior for the initial critical years. If they succeed to follow all the safety rules without any violation or accidents, then their license will be reissued; otherwise, they have to start the process from the

beginning.

The second resolution of the amendment regarding new traffic control rules covers many safety and control aspects. More fines and black points have been imposed for the case of driving without seat belts, reckless driving, driving under the influence of drugs, using mobile phones while driving, ignoring traffic lights, and speeding. All of these cases are mostly violated by young drivers. The new law will hopefully make young drivers more careful and to follow traffic rules seriously.

Apart from the strict rules applied to the road user, the Road and Transport Authority also arrange many traffic safety campaigns each year to raise awareness among residents. These campaigns include interactive and creative sessions, traffic safety videos, along with educative quiz competitions in participating schools and colleges. All of these activities raise the road user safety awareness among the people of all ages [13].

B. Private Initiative

To support the government authorities to fight against traffic accidents, the BMW Group Middle East started a campaign in 2013 named "Stay alert. Stay Alive". The focus of this campaign is to highlight the importance of wearing seatbelts. Two major organizations, Dubai Roads and Transport Authority (RTA) and the Higher College of Technology (HCT) will be working together and an online course program has been initiated focusing on safe motoring and the result of reckless driving. More than 18,000 students around the UAE will be participating in this course for 12 months. The course consists of seven modules describing the safety features in everyday driving. Though this course will enlighten all the major safety concern while driving, the main target of the BMW Group is to raise concern for using seatbelts while driving which is the main cause of death on UAE roads [16].

IV. SUGGESTION TO IMPROVE THE ROAD SAFETY FOR YOUNG DRIVERS

After analyzing the statistical data, it is observed that the major negative points for young drivers are: speeding, not wearing seat belts while driving or sitting as a passenger in the back, using mobile phones while driving and reckless driving. The UAE government has already taken many steps to address these issues; however, further actions can be taken which in turn can control the behavior of young drivers.

A. New Driving Licensing Process for Novice Drivers

To improve the driving behavior of novice drivers, a change can be brought to the licensing system. Skill based driving training and education can play a great role in minimizing accident rates. Young inexperienced drivers have problems searching the environment and detecting hazards; they tend to focus on one skill at a time, and have deficiencies assessing personal risk [22]. The Graduated Driver Licensing System (GLDS) system can be proposed where the candidates will receive a probationary license after passing the theory and

road test [23].

The GLDS has three levels of license. The first level is the learner's license, where the young driver has to complete some supervised driving hours in low risk conditions. After that, the provisional driving license with some restriction will be issued. The final level is the full license which is provided without a test, if the candidate can successfully comply with the previous two levels. This system has been adopted in the United States and around the world [23]. In the licensing system of the UAE, only the first two phases are followed.

GLDS has proven positive results in many parts of the world. For example, in North America and New Zealand, the accident crash rate for young drivers was reduced by 7% and 20%, respectively. In Ontario, GLDS was more successful, where 55% crash reduction was observed [24], [25]. Taking these results into consideration, the GLDS can be adopted in the UAE for the young drivers.

B. Installation of Average Camera

RTA has recently implemented new smart cameras which has advanced tracking capabilities and many other features to analyze driver behavior. Apart from speed monitoring, these cameras can detect drivers of using a mobile phone while driving. As these cameras are placed in fixed locations and most of the locations are known to the drivers, there is a tendency of the young drivers to drive beyond the road limit after crossing one camera and until the next camera. Introduction of average camera can be a solution to demotivate this practice.

Average cameras are installed in a fixed distance of 6 km to 8 km. These cameras detect the number plate of a vehicle and calculate the time it took to pass those points. From that, it measures the average speed of a particular vehicle. If the average speed is more than the road limit then the vehicle gets a fine. These cameras have had positive results in the UK [26]. Similar cameras can be introduced along UAE roads, and could prove positive in bring down road accidents numbers and force young drivers to drive as per the road limit at all times.

C. Safety Awareness Campaign

The UAE government arranges many campaigns throughout the year to increase awareness among people. In line with that, a special campaign can be arranged targeting young drivers to promote road safety. Such a campaign can be established in colleges and universities and a reward program can be added to ensure the active participation of all young people.

V. CONCLUSION

The results of this study reveal some alarming results of driving behavior of a specific age group (18-30 years) of UAE drivers. Every year, UAE is losing a lot of young people in road accidents which can be avoided through proper actions. The socio-economic impact of these accidents is not only huge but also hampers the future plan of UAE. Government can make more stringent driving rules for young drivers but at the end of the day, the young people have to be more considerate

to follow them. Media can play a vital role in raising awareness as it is more popular with the young people. At the same time, parents should supervise novice teen drivers on the road, which can help to prepare them better for independent driving. If teens learn to practice good driving behavior and road safety rules, it is likely that they will continue it in the long run. Finally, it is the responsibility of the individual and government together to develop good driving behavior for all young UAE drivers.

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