

Young Drivers Behavior and Its Influence on Traffic Accidents

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Abstract—Recently, media, researchers, and others have brought increased attention to young drivers' risk, hoping to find ways to reduce it. This paper investigated the risk factors of young drivers, who are considered a vulnerable road user group. A questionnaire was carried out among 750 drivers in Mansoura city, Egypt between July and September 2012 aiming to obtain information on demographic factors, drivers' behavior while driving, as well as information on the traffic violations and accident faults. Analysis of the questionnaire results proved that the main reason of young driver involved in road accidents is careless driving. Results of the questionnaire demonstrated that young drivers are more prone than other drivers to negative behavior as well as traffic violations and accidents.

Index Terms—young drivers, distraction, traffic violation, traffic accidents, crashes, risky driving.

I. INTRODUCTION

Every year around 12,000 Egyptians lose their lives as a result of road traffic crashes, 48% of those killed in motor vehicle crashes are occupants (passengers and drivers) of four-wheeled vehicles although pedestrians make up an additional one-fifth [1]. The Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS) reported that 60% of road accidents occur due to individual behavior (23% due to excessive speed, 12% wrong passing, 15% drivers inattention, 8% sudden defects, 14% blown tire, 9% due to the loose of control, 1% vehicle roll over, 9% two vehicle collisions, 1% due to weather condition and 2% for other reasons) [2]. Drivers at the age of 16 to 24 are usually called young or teen drivers. They have higher crash rates than any other age group, including not only minor crashes but also crashes resulting in injuries or fatalities [3]. Young and novice drivers high crash rates primarily result from immaturity, lack of experience, and lifestyles associated with their age and gender.

Lack of brain development is a common risk factor in the younger age group. A research study concluded that the brain doesn't mature until the age of 25 that's

where brain studies have shown that the frontal lobes which control emotion, risk-taking, and decision-making are not fully developed until young people reach the age of 25, the same time the age disappears as a risk factor for crashes after that the experience had been gained [4].

Risky driving young inexperienced drivers significantly increases their risk of having a crash; this is especially true among men [5]. In a study of over 20,000 young drivers in New South Wales, self-reported risky driving behaviors were associated with a 50% increase in the risk of crashing [6]. The younger drivers were more likely to engage in non-driving tasks within their vehicle [7]. Using in-vehicle technology (cell/smart phones, MP3 players, etc.) while driving increases the risk of a collision [8]. Research showed that, a driver's crash risk is four times higher if he or she is talking on a cell phone and 23 times higher if he/she is texting on a cell phone [9]-[11].

A study in Finland showed that 26% of the young drivers' accidents occurred at night [12]. Less visibility, less ability to accurately estimate distances, increase from the average speed because of the low traffic volume at night, and the wrong use of the high beam light, all of these factors increase the likelihood of accidents at night.

Passengers pose a significant risk to young drivers, especially when they are at the same age. Research conducted in the United States demonstrated that carrying one peer passenger increases young drivers' fatality risk by 50% compared to driving alone, whereas carrying three or more peer passenger's increases fatality risk three-fold [13]. Another study explored that, the crash rate for those at ages 16 to 19 approximately doubled with the presence of passengers, but this was not true for drivers aged 20 to 24 or 25 to 59 [14].

As reported in the literature, seatbelts, when worn properly, reduce the risk of fatal injury to front-seat passenger car occupants by 47% and cuts the risk of injury by 52% [15]. A study in Qatar showed that 57.3% of the young drivers (71% of them are male drivers while 29% are females) do not wear seat belts [16]. According to data compiled by National Highway Traffic Safety Administration (NHTSA), more than 5,341 people at the age of 15 to 20 were killed or seriously injured in traffic

crashes in 2001; two-thirds of them were not wearing safety belts [17].

II. OBJECTIVES

The main purpose of the current study is to identify the risky driving behavior of young drivers and its influence on traffic violations and accidents. The specific objectives of the study are as follows:

- To *investigate* the effect of demographic characteristics on driving behavior and crash risk.
- To understand the nature and magnitude of risks associated with various behaviors of young drivers.
- To *determine* the frequency of distraction activities among young drivers and their relation to crash risk.
- To *study* the causes of accidents and the most common causes among young drivers.
- To *understand* the nature of passengers influence on teenage driving and crash risk.

III. METHODOLOGY

A driver behavior questionnaire was formulated to collect all important information needed to achieve the objectives of this study. Participants were selected to contain all age categories but the majority was from youth, most of them students at several educational institutions in Mansoura city (Mansoura University, Delta Academy for Science, and Misr Higher Institute for Technology). The questionnaire forms were handed to the participants between July and September 2012. The questionnaire forms were distributed during academic lectures and assembled later. Some forms were posted on Facebook and others were handed to the participants and they were interviewed face to face. The participation was quite high and only fifty participants (6.25%) were excluded from the analysis for failing to answer some of the questions. The sample size of this study consisted of

750 drivers, whereof 560 males and 190 females, out of them 80.1% are young drivers (aged 16 to 24).

To design the questionnaire, previous literature studies were investigated and factors affecting behavior of young drivers were studied. Based on the studied literature and keeping in mind the Egyptian culture and habits, 29 different questions were included in the questionnaire and arranged in five sections as follows:

- The first section refers to the demographic characteristics including age, gender, marital status, education level, license type, and the age at which the driver obtained his license.
- The second section consists of eight questions measuring participants' risky and aggressive behavior while driving such as not wearing seat belts, exceeding the speed limit, racing with neighboring cars, etc.
- The third section includes seven questions regarding the *frequency* of engaging in distraction activities while driving such as making or answering a cell phone call, reading or sending text messages, etc.
- The fourth section refers to the traffic violations and *consists* of two questions. The first question is "have you ever been exposed to traffic violation(s) in the last year?" and the second question is "If yes, what are these traffic violations?"
- The fifth and final section concerns the traffic *crashes* and consists of six questions such as accident time, presence of passengers, type of injuries and material losses.

IV. RESULTS AND ANALYSIS

The following subsections summarize the questionnaire results and analyses of the participants' answers.

TABLE I. DEMOGRAPHIC CHARACTERISTIC

	Driver Age (Years)							
	16-19		20-24		25-35		More than 35	
	Male	Female	Male	Female	Male	Female	Male	Female
Gender	133(83%)	27(17%)	306(69%)	135(31%)	57(69%)	26(31%)	64(97%)	2(3%)
	Marital Status							
Single	124(94%)	27(100%)	192(63%)	46(34%)	11(19%)	13(50%)	3(5%)	0(0%)
Married	7(5%)	0(0%)	58(19%)	47(35%)	31(55%)	7(27%)	2(3%)	0(0%)
Having kids	2(1%)	0(0%)	56(18%)	42(31%)	15(26%)	6(23%)	59(92%)	2(100%)
	Having a Driving License							
Yes	46(35%)	13(48%)	286(93%)	120(89%)	55(97%)	26(100%)	61(96%)	2(100%)
No	87(65%)	14(52%)	20(7%)	15(11%)	2(3%)	0(0.0%)	3(4%)	0(0%)
	Age at which the Driver Obtained his/her License							
18 years	46(35%)	13(48%)	102(33%)	35(26%)	25(44%)	12(46%)	40(63%)	2(100%)
20-24 years	0(0%)	0(0%)	184(60%)	85(63%)	17(30%)	9(35%)	19(30%)	0(0%)
25-30 years	0(0%)	0(0%)	0(0%)	0(0%)	13(23%)	5(19%)	2(3%)	0(0%)

A. Demographic Characteristics

Table I summarizes the results of the demographic characteristics. It shows that among the 750 drivers participated in the study, 560 participants (74.6%) of them are males, with 601 (80.1%) are young drivers (between the ages 16-24 years). Results show that 87% of male teen drivers driven without a driving license. A question about the age at which driver got his/her license, helped to obtain information about the driver experience.

B. Risky Driving Behavior

The results of the frequency of risky driving behavior by age group and gender are summarized in Table II. The results show that teen male drivers are more vulnerable to risky driving behavior (48.9% of these drivers always tend to exceed the speed limit and 60.2% always tend to

pass the cars in front of them). It was found that 69.2% of the teen male drivers aged 16-19 never use the seat belt and this drops to 31.7% among the male young drivers aged 20-24. Results also show that male drivers behavior is more risky compared to female drivers for example, 22.2% of female drivers aged 16-19) always tend to exceed the speed limit compared to 48.9% of male drivers at the same age. Teen drivers are not aware of the danger compared to older experienced drivers. For example, 89.5% of teen male drivers tend to drive at night, only 13.5% often leave a safe distance and 99.2% tend to use a high beam light when being pestered by another driver compared to male drivers aged (more than 35 years). Only 9.4 % of these drivers tend to drive at night, 45.3 % often tend to leave a safe distance, 15.6% tend to use a high beam light when being pestered by another driver.

TABLE II. FREQUENCY OF RISKY DRIVING BEHAVIOR WHILE DRIVING BY DRIVERS' AGE GROUP AND GENDER

		Driver Age (Years)							
		16-19		20-24		25-35		More than 35	
		Male	Female	Male	Female	Male	Female	Male	Female
Exceeding Speed Limit	Never	0.0%	0.0%	3.6%	6.7%	68.5%	46.2%	65.6%	100.0%
	Sometimes	1.5%	0.0%	22.5%	14.1%	17.5%	34.6%	18.8%	0.0%
	Often	49.6%	77.8%	41.5%	22.2%	14.0%	19.2%	9.4%	0.0%
	Always	48.9%	22.2%	32.4%	57.0%	0.0%	0.0%	6.2%	0.0%
Racing with Neighboring Cars	Never	1.5%	29.6%	8.5%	49.6%	47.4%	69.2%	37.5%	100.0%
	Sometimes	11.3%	37.0%	28.8%	34.1%	38.6%	19.2%	46.9%	0.0%
	Often	54.1%	33.4%	39.5%	16.3%	0.0%	11.5%	15.6%	0.0%
Driving in the Form of Sutures	Never	11.3%	51.9%	32.0%	61.5%	47.4%	80.8%	50.0%	100.0%
	Sometimes	48.9%	40.7%	47.1%	36.3%	22.8%	19.2%	46.9%	0.0%
	Often	32.3%	0.0%	11.1%	2.2%	15.8%	0.0%	3.1%	0.0%
Passing Front Cars	Always	7.5%	7.4%	9.8%	0.0%	14.0%	0.0%	0.0%	0.0%
	Never	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Sometimes	3.7%	18.6%	4.6%	5.9%	0.0%	61.5%	10.9%	0.0%
	Often	36.1%	44.4%	51.3%	71.1%	40.4%	34.6%	48.5%	100.0%
Leavening a Safe Distance	Always	60.2%	37.0%	44.1%	23.0%	59.6%	3.8%	40.6%	0.0%
	Never	0.0%	0.0%	1.6%	2.2%	3.5%	0.0%	0.0%	0.0%
	Sometimes	72.2%	59.3%	52.0%	36.3%	36.8%	7.7%	39.1%	0.0%
	Often	13.5%	40.7%	30.1%	45.9%	42.2%	42.3%	45.3%	100.0%
Using Seatbelts	Always	14.3%	0.0%	16.3%	15.6%	17.5%	50.0%	15.6%	0.0%
	Never	69.2%	51.9%	31.7%	15.6%	5.3%	0.0%	0.0%	0.0%
	Sometimes	18.0%	37.0%	51.3%	41.4%	29.8%	7.7%	14.1%	0.0%
	Often	12.8%	3.7%	12.1%	39.3%	50.9%	42.3%	21.8%	0.0%
Reaction when Being Pestered by Another Driver	Always	0.0%	7.4%	4.9%	3.7%	14.0%	50.0%	64.1%	100.0%
	High Beam Light	99.2%	14.8%	41.2%	14.1%	28.1%	0.0%	15.6%	0.0%
	Aggressive Drive	74.4%	11.1%	36.9%	0.7%	1.8%	7.7%	6.3%	0.0%
	Stop and Speak with Him	16.5%	11.1%	40.8%	23.0%	26.3%	7.7%	15.6%	0.0%
Preferred Driving Time	No Reaction	0.8%	77.8%	36.9%	63.0%	59.6%	92.3%	98.4%	100.0%
	Day	10.5%	100.0%	16.3%	79%	75.4%	84.6%	90.6%	100.0%
	Night	89.5%	0.0%	83.7%	21%	24.6%	15.4%	9.4%	0.0%

C. Distraction Activities while Driving

Table III presents the results of driver distraction status by age and gender of the driver. The table shows that drivers under the age of 20 are more likely to be distracted compared to older experienced drivers. The most common form of distraction for teen male drivers was found to be listening or adjusting the car radio or MP3 players (always= 63.2%) followed by making or

answering a cell phone call (always=61.1%), then taking with passengers (always= 8.6%). Regarding teen female drivers, the most common form of distraction was found to be talking with passengers while driving (always=70.4%), followed by listening or adjusting the car radio or MP3 players (always = 44.4 %) then making or answering a cell phone call (always = 29.6 %). For

female drivers aged 20-24 years, making or answering a cell phone call was found to be the highest form of distraction activities followed by taking with passengers.

TABLE III. PERCENTAGE OF DISTRACTION ACTIVITIES WHILE DRIVING BY DRIVERS' AGE GROUP AND GENDER

		Driver Age (Years)							
		16-19		20-24		25-35		More than 35	
		Male	Female	Male	Female	Male	Female	Male	Female
Making or Answering a Cell Phone Call	Not at all	0.0%	0.0%	2.3%	9.6%	0.0%	0.0%	4.7%	0.0%
	Sometimes	6.8%	7.4%	19.8%	13.2%	36.8%	50.0%	25.0%	100.0%
	Often	32.1%	63.0%	28.4%	11.3%	38.6%	50.0%	48.4%	0.0%
	Always	61.1%	29.6%	49.5%	65.9%	24.6%	0.0%	21.9%	0.0%
Reading or Sending Text Messages	Not at all	3.8%	55.6%	2.3%	40.7%	57.9%	61.5%	35.9%	0.0%
	Sometimes	9.7%	7.4%	57.8%	38.5%	36.8%	38.5%	56.3%	100.0%
	Often	63.2%	25.9%	10.5%	19.4%	5.3%	0.0%	7.8%	0.0%
	Always	23.3%	11.1%	29.4%	4.4%	0.0%	0.0%	0.0%	0.0%
Listening or Adjusting a Radio, CD Player, or MP3 Player	Not at all	2.3%	0.0%	1.3%	3.2%	0.0%	0.0%	4.7%	0.0%
	Sometimes	10.4%	7.5%	7.8%	59.3%	24.6%	0.0%	15.6%	0.0%
	Often	24.1%	48.1%	47.4%	16.0%	33.3%	65.4%	53.1%	100.0%
	Always	63.2%	44.4%	43.5%	21.5%	42.1%	34.6%	26.6%	0.0%
Watching a Display Screen	Not at all	8.3%	14.9%	15.0%	22.2%	91.2%	62.4%	32.8%	0.0%
	Sometimes	16.5%	37.0%	3.6%	27.2%	3.5%	23.1%	43.8%	100.0%
	Often	31.6%	25.9%	42.8%	34.1%	5.3%	4.5%	18.7%	0.0%
	Always	43.6%	22.2%	38.6%	16.5%	0.0%	0.0%	4.7%	0.0%
Smoking while Driving	Not at all	8.3%	100.0%	16.3%	89.0%	71.9%	92.3%	43.8%	100.0%
	Sometimes	9.0%	0.0%	14.5%	11.0%	8.8%	0.0%	7.8%	0.0%
	Often	31.1%	0.0%	39.5%	0.0%	12.3%	7.7%	43.7%	0.0%
	Always	51.6%	0.0%	29.7%	0.0%	7.0%	0.0%	4.7%	0.0%
Talking with Passengers	Not at all	0.0%	0.0%	1.6%	2.2%	40.4%	46.2%	50.0%	0.0%
	Sometimes	6.8%	0.0%	14.7%	28.2%	42.1%	53.8%	26.5%	100.0%
	Often	34.6%	29.6%	35.0%	23.7%	8.7%	0.0%	18.8%	0.0%
	Always	58.6%	70.4%	48.7%	45.9%	8.8%	0.0%	4.7%	0.0%
Eating or Drinking	Not at all	0.0%	0.0%	1.6%	45.2%	24.6%	3.8%	50.0%	0.0%
	Sometimes	16.1%	0.0%	46.4%	4.4%	56.1%	46.2%	34.4%	100.0%
	Often	38.0%	88.9%	44.8%	33.3%	15.8%	50.0%	10.9%	0.0%
	Always	45.9%	11.1%	7.2%	17.1%	3.5%	0.0%	4.7%	0.0%

D. Traffic Violation

Data in Table IV shows that speed, driving with suspended license, using mobile phone while driving, and not wearing seatbelt are the most common traffic violations among teen drivers. These traffic violations agree with the risky driving behaviors and distraction activities related to those drivers, which were presented in Table II and Table III. Results also show that the youngest age group of drivers (16-24 years old) has the

highest traffic rules violation rate. This finding agrees quit well with previous studies. Moreover, those drivers with high violation rates are more likely to commit risky driving behaviors than those with lower traffic violations. Results in Table IV shows that cell phone violation is the second highest rate of traffic violations for females. This complies with the results presented previously in Table III, which shows that 65.9% of female drivers aged 20-24 tend to make or answer a call while driving.

TABLE IV. COMPARISON OF TRAFFIC VIOLATIONS AMONG DRIVERS, BY AGE GROUP AND GENDER

	Driver Age (Years)							
	16-19		20-24		25-35		More than 35	
	Male	Female	Male	Female	Male	Female	Male	Female
Speeding	27%	18%	12%	7%	14%	7%	10%	0%
Not Wearing Seatbelt	14%	11%	17%	18%	15%	0%	7%	0%
Wrong Parking	8%	15%	17%	28%	25%	62%	32%	100%
No License	22%	11%	15%	6%	10%	0%	6%	0%
Cell Phone	17%	26%	18%	25%	14%	11%	12%	0%
Traffic Signals	4%	5%	8%	4%	5%	0%	6%	0%
Suspended License	7%	5%	5%	3%	1%	0%	6%	0%
Other	1%	10%	7%	9%	15%	20%	22%	0%

E. Traffic Acciden

Table V summarizes the characteristics of traffic accidents by age group and gender. Data in this table shows that male drivers of all age groups are more likely to be involved in traffic accidents than female drivers.

Young female drivers have higher rate of crashes compared to older female drivers. About 86% of teen male drivers were involved in traffic accidents compared to 41% of female drivers at the same age. About 83 % of the accidents involved teen drivers occurred at night

compared to 12% of older drivers (ages more than 35 years). About 77.9 % of injuries in young drivers' accidents occurred to drivers and passengers while pedestrians made up only 22.1%. Compared to other drivers of the same age without passengers, the risk of fatal injury for 20-24 years old drivers with one passenger

was 1.19 times higher, 1.88 times higher with two passengers, and 2.76 times higher with three passengers or more. In contrast, the risk of fatal injury for older drivers (more than 25 years) decreased if there were no passengers in the car, as well as older drivers are positively impacted by young passengers.

TABLE V. CHARACTERISTICS OF TRAFFIC ACCIDENTS BY AGE GROUP AND GENDER

	Driver Age (Years)						
	16-19		20-24		25-35		More than 35
	Number (%)	Female	Male	Female	Male	Female	Male
Exposure to Accidents							
Yes	115(86)	11(41)	200(65)	70(51)	20(35)	9(33)	17(27)
No	18(14)	16(59)	106(35)	65(49)	37(65)	18(67)	47(73)
Time of Accident							
Day	20(17)	9(82)	120(60)	45(64)	15(75)	7(78)	15(88)
Night	95(83)	2(18)	80(40)	25(36)	5(25)	2(22)	2(12)
Injuries							
Driver Injury	77(52)	11(69)	136(40)	47(46)	22(39)	6(37)	13(48)
Injury of Passengers	49(33)	0(0)	125(36)	30(29)	7(13)	2(13)	2(7)
Pedestrian Injury	23(15)	5(31)	82(24)	25(25)	27(48)	8(50)	12(45)
Material Losses							
Car	78(54)	11(69)	162(57)	60(58)	25(89)	9(41)	18(41)
Public Ownership	61(42)	5(31)	105(37)	32(31)	3(11)	3(14)	11(25)
Other	5(4)	0(0)	18(6)	11(11)	0(0)	10(45)	15(34)
Presence of Passengers							
No Passengers	11(10)	1(9)	20(10)	26(37)	18(90)	7(78)	15(88)
One	18(16)	1(9)	30(15)	20(29)	1(5)	1(11)	1(6)
Two	27(23)	5(46)	65(33)	12(17)	1(5)	1(11)	1(6)
Three or More	59(51)	4(36)	85(42)	12(17)	0(0)	0(0)	0(0)
Age of Passengers							
16-19 years	75(72)	8(80)	45(25)	14(32)	0(0)	0(0)	0(0)
20-24 years	23(22)	2(20)	96(53)	22(50)	0(0)	0(0)	0(0)
25-35 years	4(4)	0(0)	30(17)	8(18)	1(50)	1(50)	1(50)
More than 35 Years Old	2(2)	0(0)	9(5)	0(0)	1(50)	1(50)	1(50)

Table VI presents the causes of traffic accidents by age group and gender. Data shows that there is a significant difference existed between the younger and experienced driver groups in the contributing factors for traffic crashes. Results show that weather condition is a significant contributing factor in case of experienced driver crashes. For teen/adult young drivers driving at night, speed, distracted driving, and risky passing are the major factors for crashes.

Driving at night is a significant contributing factor in male teen drivers' crashes (25% of the crashes). Speeding is even a more significant contributing factor for male drivers' aged 20-24 years crashes (27%, compared to 13% for the experienced drivers aged more than 35 years). Results also show that lack of attention is a major contributing factor in female teen drivers crashes followed by speeding then driving at night, which represent 23%, 18%, and 12% respectively.

TABLE VI. THE PERCENTAGE OF CAUSES OF TRAFFIC ACCIDENTS, BY AGE GROUP AND GENDER

	Driver Age (Years)							
	16-19		20-24		25-35		More than 35	
	Male	Female	Male	Female	Male	Female	Male	Female
Speeding	23%	18%	27%	10%	22%	13%	13%	0%
Lack of Attention	21%	23%	21%	22%	4%	6%	3%	0%
Driving at Night	25%	12%	23%	6%	13%	13%	17%	0%
Wrong Passing	21%	10%	17%	25%	4%	13%	2%	0%
Road Condition	5%	10%	6%	6%	5%	14%	21%	0%
Weather Condition	2%	13%	2%	16%	22%	29%	21%	0%
Fault of Others	2%	7%	2%	2%	20%	0%	17%	0%
Other	1%	8%	2%	14%	10%	11%	8%	0%

Fig. 1 shows that the effect of driving experience is more significant than age. Drivers who began driving at 18 years-old experienced a drop in crash risk of approximately 48 % by the time they are 21. Had the same drivers begun driving at 21, their initial crash risk would only be about 34 % less than if they had begun at

18. Additionally, while gaining experience is a challenge for all new drivers, the impact of experience over time appears to be much greater when the novice is young

The collected data also shows that 67% of crashes occurred by single drivers, 20% by married drivers, and only 13% by married drivers who have kids.

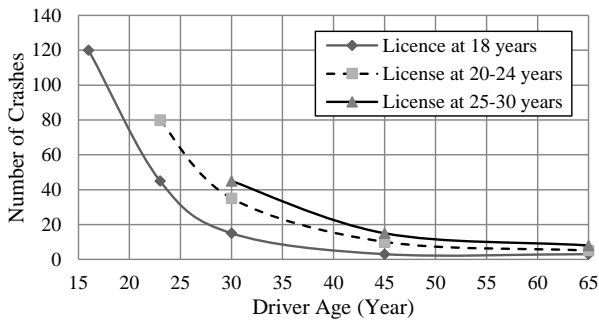


Figure 1. Relationship between number of crashes and driving experience

Fig. 2 shows that the young drivers are more prone to traffic accidents compared to older drivers. About 48% of drivers aged 16-19 years had three or more accidents compared to 12% of drivers who are at ages greater than 35. The highest percentage of frequent crashes occurred to teen drivers (aged 16-19 years) followed by adult young drivers (aged 20-24 years), while older drivers (aged more than 35 years) were at the lowest percentage in the recurrence of traffic accidents. These results show that young drivers do not realize the danger.

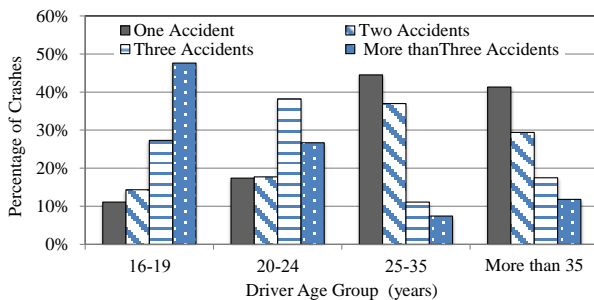


Figure 2. Percentage of crashes by age group

V. CONCLUSIONS AND RECOMMENDATIONS

In this paper the risk factors of young novice drivers were investigated. Risk rates of young drivers were estimated per various driver, vehicle, and road environment characteristics. Based on the results and analyses of this research the following conclusions were drawn:

- Male drivers tend to be involved in more accidents compared to their female peers, and this tendency decreases with the increase in the driver's age. Moreover, married young drivers have fewer accidents than single drivers.
- Driving experience reduced risk rates significantly especially for drivers aged between 20-24 years old. About 80% of crashes occurred to drivers who obtained their license at the age of 20-24 years which was reduced to 41% for the drivers who obtained their license at 18 years old.
- Driving at night was identified as a risky driving condition. Teen drivers tend to drive at night with 83% crashes occurred at night compared to 12% of crashes involved drivers aged more than 35 years.

- There is a strong relation between risky driving behaviors, traffic violations, and traffic accidents. Drivers with high risky driving behavior have more exposure to traffic violations and accidents. The findings show that young drivers are frequently involved in the highest proportion of risk behaviors and traffic accidents than all other age groups.
- Common reasons for crashes among teen drivers are driving at night, speed, lack of attention, and wrong passing whereas common reasons for crashes among older drivers are the weather conditions, road condition, and faults of others.
- Young drivers are negatively impacted by young passengers riding with them, especially passengers from their peer age group. The risk increased with the increase in the number of young passengers. Nonetheless, older drivers are positively impacted by young passengers.

A number of recommendations are suggested to reduce both the incidence and severity of young driver crashes. These include:

- Making campaigns for raising driver awareness classes on driving behaviour and road safety at schools.
- Speeding is one of the main contributory causes which increase young drivers crash involvement. Hence, speed management cameras and the use of in-vehicle technology such as intelligent speed adaption in vehicle will be beneficial to prevent driving too fast.
- Distraction is also a main contributory cause for young drivers. This includes nontechnology-based activities such as eating, drinking, smoking, and talking with passengers, as well as technology-based activities. Thus enforcing the laws, such as prohibiting mobile phone use while driving and the use of visual displays would be beneficial, particularly for young drivers.
- Implementation of graduated driver licensing system (GDLS) in Egypt for protecting novice and young drivers, passengers and other road users. GDLS provides novice and young drivers great opportunities to practice under supervision as well as limiting their exposure to risky conditions and circumstances such as nighttime driving and travelling with peer passengers while they mature and gain experience.

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