



## **IRF WORLD ROAD MEETING 2017**

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### **Study on Seat Belt Usage: Case Study of Abu Dhabi Emirate, UAE**

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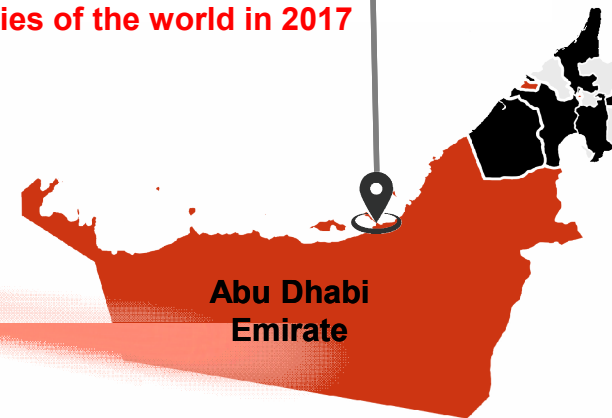
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# ABOUT ABU DHABI

Abu Dhabi City

Capital of United Arab Emirates

First in 9 safest cities of the world in 2017



Abu Dhabi  
Emirate



## Population

- About 3.2 million .
- More than 200 different nationalities.
- Car oriented population .



## Road network

- Most Rural roads  $\geq$  4 lanes with 120 kph speed limit.
- Most Urban roads  $\geq$  3 lanes.
- enforced speed 20kph over the posted speed.



## Unique Licensed drivers

- 85% of drivers are males,
- 92% younger than 45 years old,
- 87% are foreigners.

# INTRODUCTION

## SEAT-BELTS: THE FACTS

Wearing a seat-belt reduces the risk of a fatal injury by:

Up to

**50%**

For front seat  
occupants



Up to

**75%**

For rear seat  
occupants



2008



جامعة الإمارات العربية المتحدة  
United Arab Emirates University

**UAEU** College of Medicine  
and Health Sciences

- **29%** of drivers wore seat “uncool” to wear it.
- **98%** of children travelling in a car were not restrained.
- **23%** of children travelled in the front seat.

2014



هيئة الصحة - أبوظبي  
HEALTH AUTHORITY - ABU DHABI

- Only one-third of young drivers always wear seat-belt.
- While **44%** of the young’s had a traffic crash, **72%** reported that they rarely wear seat belts or do not wear them at all.

2015



شرطة أبوظبي  
ABU DHABI POLICE

- For each **3** fatal in Emirate of Abu Dhabi, **2** of them related to traffic crashes
- Significantly increment for (non use of seat belt while driving) violations between 2010 and 2014 by about **68.7%**, (**21%** of hazardous violations).

- Based on known restraint use, **when the drivers were unrestrained, 70% of the children were also unrestrained**

**• Spain:**

- **reverse relationship** between the rate of seat belt using and driver experience.

**• Norway:**

- Drivers & front seat passengers who do not use seat-belts suffer almost the same percentage of head injuries as non-users in rear seats.
- **Children who sit in the rear without child restraints have around 25% lower risk of being injured than children who sit in the front without restraints.**

**• Turkey:**

- If the **education level increases** the seat-belt usage increased.
- 67.5% of driver did not feel comfortable when use the seat-belt.
- **45.8% did not use the seat belt because no one else was used it**

**• USA:**

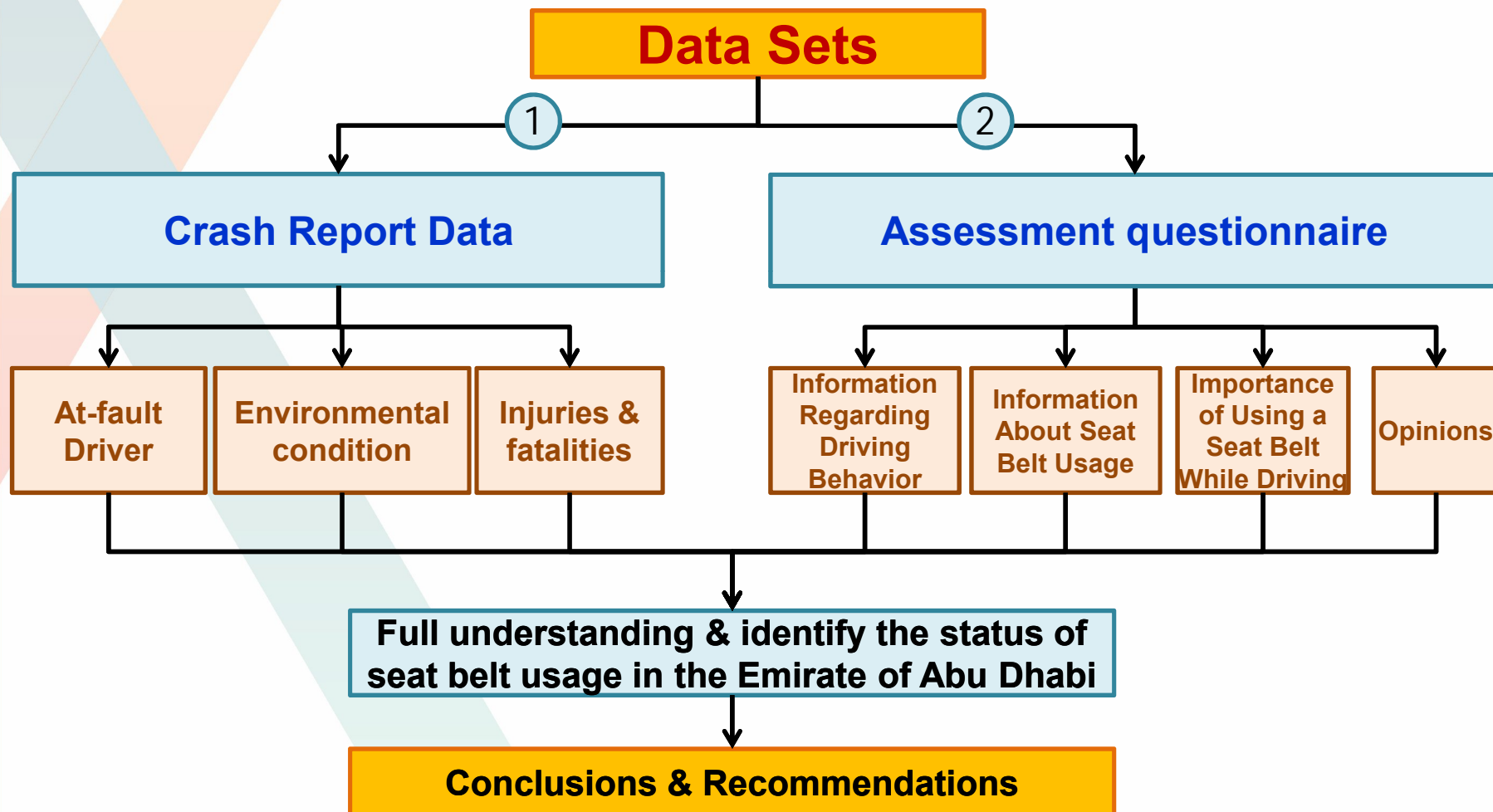
- 44% of unrestrained passenger vehicle occupants killed are **ejected** from the vehicle.
- **Young** drivers and **front-seat** passengers are less likely than older drivers and passengers to use seat-belts while in a moving vehicle.
- Using the rear seat belt much high in the state which has rear seat belt **enforcement law**.
- The usage rates of the seatbelt for **Van occupant, female and urban residents** were high. On the other hand that rate was low for the **truck occupants, male and rural residents**.

**• Malaysia:**

- seat belt utilization much higher in the industrial countries and the utilization rate different because of culture differences. Also **45% of educated driver who admitted they always using the seat belt were on group aged from 18 to 35 years old.**

# OBJECTIVE & DATA COLLECTION

- To identify the status of seat belt usage in the Emirate of Abu Dhabi.

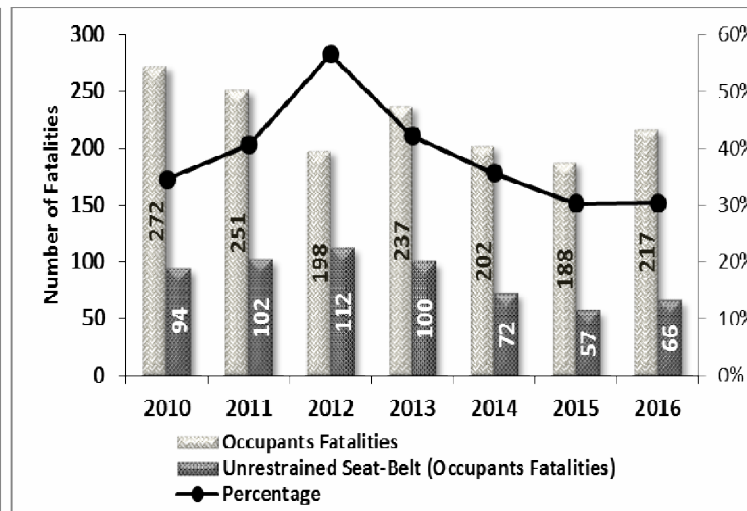
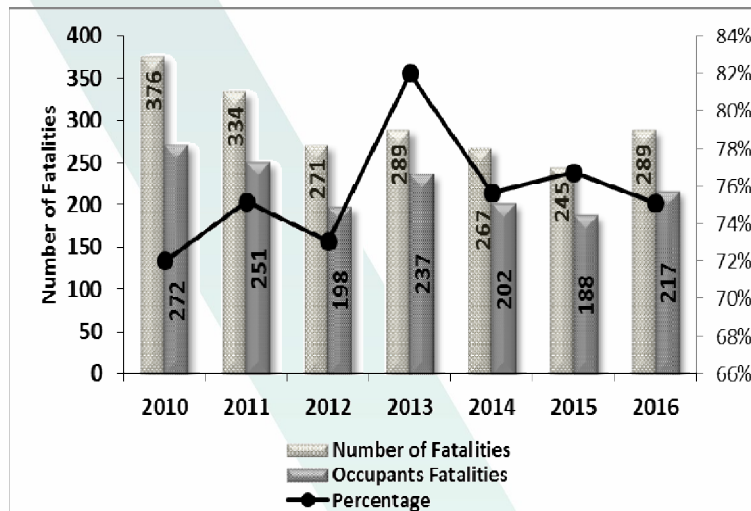


# CRASH DATA ANALYSIS

Indicator	2010	2011	2012	2013	2014	2015	2016
Number of Severe Crashes (i.e. crashes with at least one injury or fatality)	2537	2283	2056	2071	1861	1803	1740
Number of Fatalities	376	334	271	289	267	245	289
Occupants' Fatalities	272	251	198	237	202	188	217
Fatalities who not fasten Seat Belts	94	102	112	100	72	57	66

- **Frequency of occupants fatalities cross years**

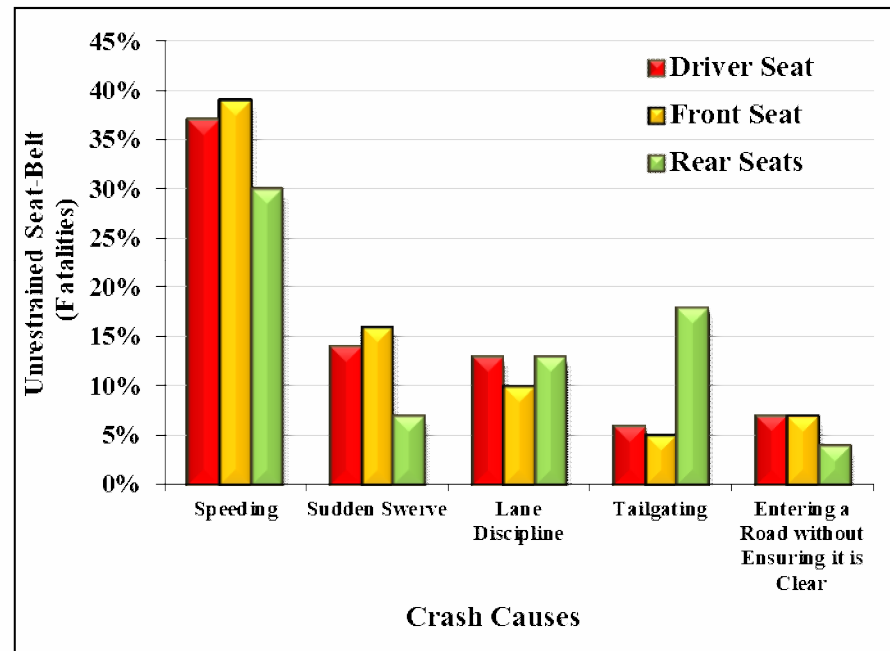
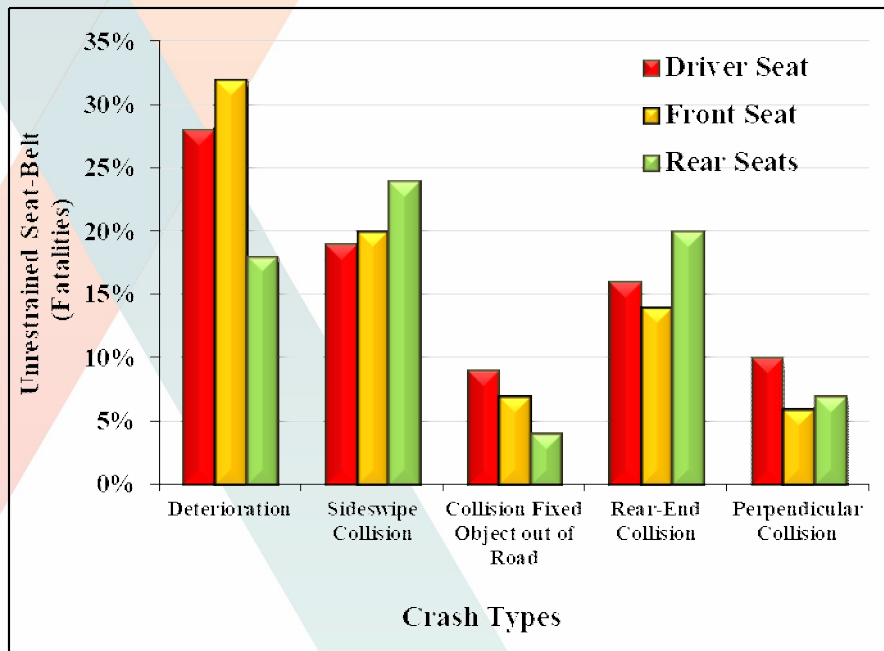
- **75.7%** of crashes' fatalities were occupants.
- **39%** of the occupants' fatalities did not fasten seat-belts.
- **significant relationship** between unrestrained occupants' fatalities and their seat location.
- **58%** of occupants' fatalities whose not fasten seat-belt were drivers and 23% of them were rear seat passengers.



- **Characteristics of occupants' fatalities who not fasten seat-belt**

Variable	Categories	Driver Seat		Front Seat		Rear Seat		Total
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
Gender	<b>Male</b>	325	92.3%	93	80.9%	98	72.1%	516
	Female	27	7.7%	22	19.1%	38	<b>27.9%</b>	87
Age	Under 18 years	10	2.8%	16	13.9%	27	19.9%	53
	<b>18-24</b>	93	26.4%	32	27.8%	23	16.9%	148
	25-30	71	20.2%	25	21.7%	26	19.1%	122
	31-40	83	23.6%	21	18.3%	31	22.8%	135
	41-50	53	15.1%	9	7.8%	19	14.0%	81
	51-60	28	8.0%	6	5.2%	5	3.7%	39
	Over 60	14	4.0%	4	3.5%	4	2.9%	22
	Unknown	0	0.0%	2	1.7%	1	0.7%	3
Under 18 years	<b>0 - 4 Years</b>	0	0.0%	7	<b>43.8%</b>	11	40.7%	18
	5 to 9 Years	0	0.0%	0	0.0%	7	25.9%	7
	10 to 17 Years	10	100.0%	9	56.3%	9	33.3%	28
Road Speed	Below 40 Km/hr	9	2.6%	2	1.7%	0	0.0%	11
	40 Km/hr	30	8.5%	3	2.6%	7	5.1%	40
	60 Km/hr	81	23.0%	26	22.6%	45	<b>33.1%</b>	152
	80 Km/hr	74	21.0%	15	13.0%	25	18.4%	114
	100 Km/hr	88	<b>25.0%</b>	37	<b>32.2%</b>	33	24.3%	158
	120 Km/hr	70	19.9%	32	27.8%	26	19.1%	128

- Relationship between unrestrained occupants' (fatalities) and crash types / causes



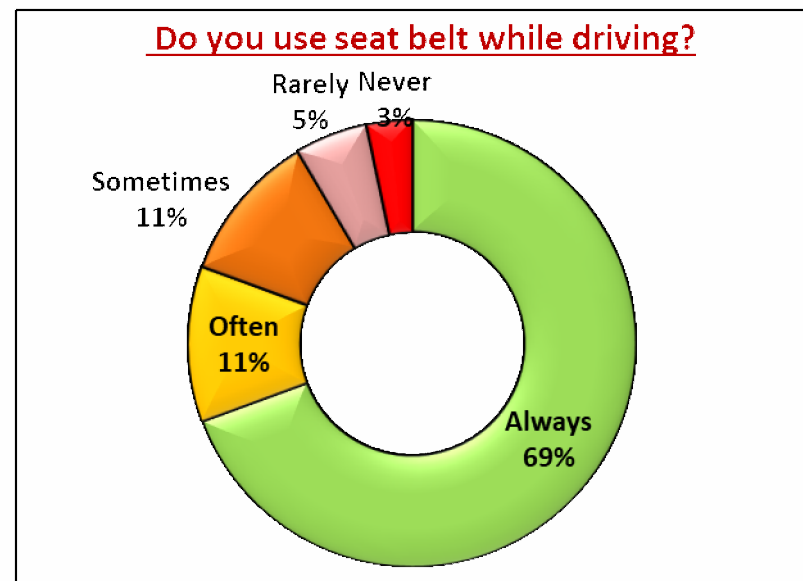
# QUESTIONNAIRE (Analysis & Results)

## • Self-reported Questionnaire

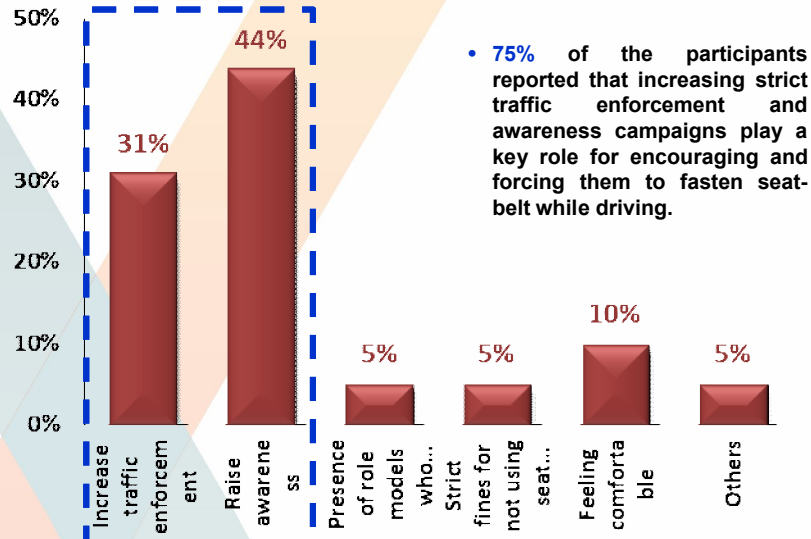
- The use of seatbelts while driving.
- Random sample of licensed drivers in AD.
- **39 questions** was prepared in three different languages; Arabic, English, and Urdu.
- Divided into five sections:
  1. Demographic information,
  2. Information Regarding Driving Behavior,
  3. Information About Seat Belt Usage,
  4. Importance of Using a Seat Belt While Driving,
  5. Opinion

- **31%** do not always wear a seat belt while driving.
  - **45%** feel uncomfortable driving when use it.
  - **7%** due that to the absence of traffic enforcement and non-strict fines.
  - **3%** feel that their use is dangerous for lives.
  - **4%** are not convinced about seatbelts role in saving lives.

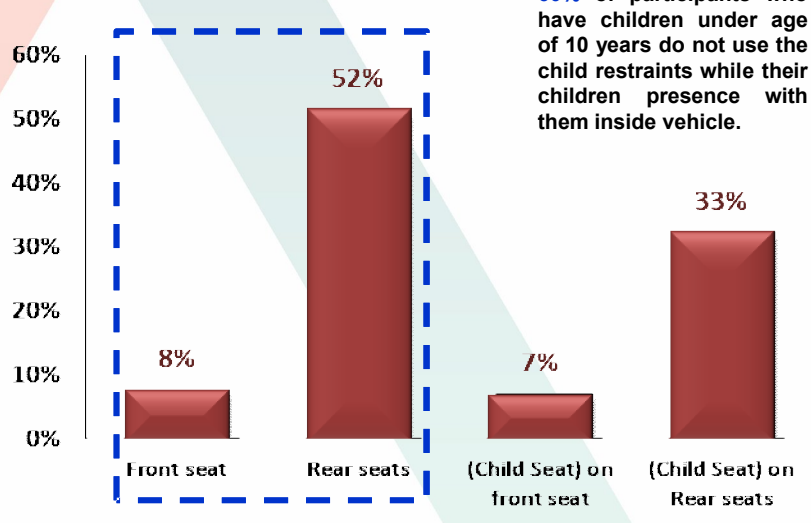
Variables	Categories	frequency	Percent
<b>Demographic Information</b>			
Gender	Female	257	23
	Male	847	77
Age	< 18	6	1
	18 - 25	116	10
	26 - 35	515	46
	36 - 45	265	24
	46 - 60	162	15
	> 60	40	4
Nationality	U.A.E.	328	30
	G.C.C.	39	3
	Arabs	319	29
	Asian	355	32
	Others	63	6
Education	High school degree or less	439	40
	University degree or higher	665	60



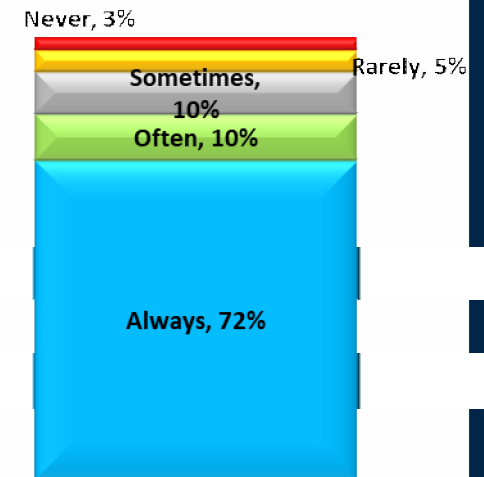
### What are the conditions that may force you to use seat belt while driving?



### Where do you often put your child while driving?



- Although 89% of the participants reported their well knowing about that not fasten a seat-belt increasing the risk of serious injuries crashes, more than 25% of always fasten a seatbelt while driving.



## CONCLUSION



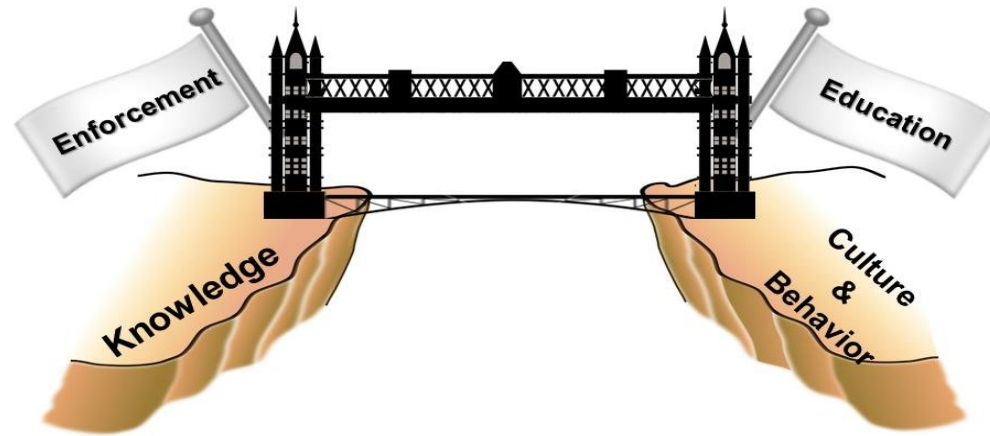
### Importance of Using a Seat Belt While Driving

Variables	Categories	%
Q28: Do you know that using seat belt reduces the risk of death by 50%?	Yes	88
	No	12
Q30: Do you know that 3 out of 4 traffic crashes occurs in a distance of 40km from home, so it's so important to wear seat belt even if driving for short distances?	Yes	71
	No	29
Q34: Do you know that the probability of getting injured in the spine due to traffic crash is 14 times higher in case of not using seat belt?	Yes	67
	No	33
Q35: Did you receive any awareness (through campaigns) regarding the importance of using seat belt while driving?	Yes	66
	No	34

- 39% of the occupants' fatalities did not fasten seatbelts.
- There is a significant relationship between occupants' fatalities whose not fasten seat-belt and seat location.
- Rear seat passengers (especially female) are the least committed to fasten seat belt.
- 39% of fatalities (whose not fasten seat-belt) who are on age category (0-4) were set on front seat.
- 31% do not always wear a seat belt while driving.
- 60% of participants who have children under age of 10 years do not use the child restraints.



# Actions Were Taken



## New Violations & Penalties

Violation No.	Violation	Fine (AED)	Demerit Points
49	A child of age 10 years or below, or who is less than 145 cm height sitting in the front seat of the vehicle.	400	-
50	Do not provide child restraints for children age of 4 years or less while they are in the vehicle.	400	-
51	A. Do not fasten seat-belt while driving (Drivers).	400	4
	B. Do not fasten seat-belt while driving (Passengers).		-

## Awareness Campaign





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**THANK YOU**