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Article

# Knowledge and Attitude of First Aid Measures among Drivers in Sharjah

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**Simple Summary:** The article highlights the critical role of first aid in addressing the global public health issue of road traffic accidents (RTAs). It emphasizes the significance of first aid in minimizing the devastating consequences of RTAs, which are a leading cause of mortality and morbidity worldwide. The importance of prompt assistance in saving lives, preventing further harm, and facilitating recovery is underscored. Supporting researches that demonstrated the benefits of first aid programs for drivers in enhancing pre-hospital care. The World Health Organization's statistics on RTAs globally and the specific impact in the UAE, where RTAs contribute significantly to premature death and long-term disabilities. There is a noted lack of published research assessing first aid knowledge in the UAE, with a 2019 study revealing limited understanding among the population. The conclusion suggests the need for accessible and regularly updated first aid courses for the public.

**Abstract: Background:** Injury is an important cause of mortality and morbidity.(1). FA is the immediate assistance provided to a suddenly injured or sick person until professional help arrives or that person has recovered.(2), could be a potential factor differentiating between life and death in RTA . Many lives would be saved if proper first aid was provided early. (3) In the middle east, there are limited studies that explore knowledge and practices towards first aid needed during RTA. **Objective:** The main aim of this study is to investigate the knowledge and attitude towards first aid among drivers in Sharjah. **Methodology:** A cross-sectional study was conducted through a self-administered questionnaire written in Arabic and English languages. Participants were 18 years or older holding a driving license in the city of Sharjah. Paramedics and certified participants with a certification from authorized organizations were excluded. A non-proportional convenient sampling method was used. A total of 343 participants completed the questionnaires. Data was entered and analyzed using SPSS. **Results:** Majority of the study participants were less than 40 years old and (56.76%) were males. Most participants(94.2%) indicated that they know the term 'First Aid'. However, (49.73%) of the participants knew the ambulance number and (52.43%) of the participants indicated that the victim should be moved to the hospital without the ambulance. With regards to attitude, 34.86% were not willing to provide first aid in the case of RTA. The main reason was lack of knowledge followed by fear of legal consequences. Most participants (83,78%) were willing to participate in first aid classes to improve their knowledge and attitude. **Conclusion:** Most participants are aware of the basic term of first aid; however, they are not willing to provide first aid in cases of RTA due to lack of knowledge and fear of legal consequences. Based on these findings we recommend providing first aid classes for new drivers and obtaining certification.

**Keywords:** first aid; knowledge and attitude; Sharjah; RTA; cross-sectional

## 1. Introduction

First aid entails the primary care administered for a sudden illness or injury.[1] First aid plays an important role in minimizing the devastating consequences of road traffic accidents (RTA), which is a major global public health issue. Many people get injured or lose their lives due to RTAs on a day-to-day basis, which in turn, make RTAs one of the leading causes of mortality and morbidity worldwide and this highlights the importance of first aid, we cannot underestimate or minimize the value it provides.[2–4]

First aid serves as the first line of defense in saving people's lives, decreasing the rate of injuries, and providing instant care until the ambulance and the medical team help arrive. For example, a 2014 study done in Northern Iran, the study conducted on 500 drivers selected randomly from transport companies, the sample underwent first aid training courses and then evaluated after 0-3 months and 4-6 months. Improvement in giving first aid efficiency was observed also, the rate of correct interventions was higher after 4-6 months than 0-3 months. The study concluded that first aid programs designed for drivers were beneficial and enhanced road traffic accidents as a prehospital care system. [5]

First aid is defined as prompt assistance given to someone who has become suddenly injured until professional help arrives or until the injured patient regains health. The main and primary goal of first aid is to save life, relieve pain, prevent further harm, or damage and facilitate quicker recovery. [2,6,7] Promoting first aid education is crucial for every age group, including kindergarten children. This universal learning can happen through live classes, online courses, and public health campaigns.[8,9]

According to the World Health Organization (WHO), road traffic accidents (RTA) are responsible for approximately 50 million injuries and about 1.2 million deaths worldwide. Also, it is the 8th leading cause of disability-adjusted life years. [5,10,11]

In the UAE, the top four causes of death are cardiovascular disease, injuries, cancer, and respiratory diseases.[12] RTAs are a leading cause of premature death and long-term disabilities, especially among men under 35 in the UAE, escalating the numbers of physical disabilities and enduring handicaps.[13] many organizations, institutes and even universities provide teaching courses regarding basic life support (BLS) and first aid, however it's usually limited to medical students and paramedics [2].

There are very few published articles and research that assesses first aid knowledge here in UAE, and even in the Middle east. As an illustration, a 2019 study conducted in UAE, found that approximately half of the population (54.2%) have limited understanding regarding first aid. And a mere (33.8%) had undergone first aid training courses. The ultimate findings of this study were that first aid knowledge here in UAE is lacking and insufficient. Also, the research suggests that first aid courses should be accessible to the public and undergo frequent updates. [2]

## 2. Methods

### 2.1. Design of the study

This cross-sectional study was executed in public spaces such as parks and malls within the emirate of Sharjah from October 2020 to November 2020.

### 2.2. Sample of the study

The target population included people with a valid driving license and were available at the time and place of distributing the survey. Exclusion criteria consisted of people who did not speak Arabic or English, paramedics, and anyone with a basic life support certificate (BLS). A non-proportional convenience sampling technique was used. The sample size was calculated using the following formula  $n = 4p(1-p)/ME^2$ , where  $n$  = sample size,  $p$  = prevalence, and  $ME$  = marginal error. Prevalence was adapted from neighboring countries as not enough similar studies were conducted

in the UAE. According to that, the sample size was found to be 385. The final sample size collected with regards to the exclusion criteria was 370.

### 2.3. Data collection and The tool of the study

A self-administered anonymous questionnaire was constructed based on a previously established tool in a study conducted in the UAE [1]. The questionnaire consisted of 18 questions divided into 3 parts: Demographics (6 questions), Knowledge about first aid (4 questions) and attitude towards first aid (8 questions). Data collection was carried out using a structured questionnaire. The questionnaire included sections on demographics, occupation, driving experience, first aid knowledge and awareness, emergency contact knowledge, first aid actions, breathing assessment, bleeding control, willingness to provide first aid, immediate responses to road traffic accidents, interest in first aid training, and opinions on the necessity of first aid training for all driving license holders.

For each individual a scoring system was calculated representative of overall knowledge score. The knowledge was assessed in both broad and specific manner. Three different scoring levels were used, a score of 67% and above was labeled as 'good knowledge', and between 33% and 67% was labeled 'moderate knowledge', whereas any score below 33% indicated 'poor knowledge'. [2]

### 2.4. Data analysis

The data analysis for this study used the statistical software, SPSS 22 (Statistical Package for Social Sciences). Univariate analysis was conducted to gain an understanding of individual variables. Descriptive statistics include measures to conduct data such as frequency and relative frequency, measures of central tendency such as mean, median, and mode, and measures of variability. Inferential statistical tests including chi-square, t-test and Pearson correlation as appropriate to the type of variables involved were used. The level of significance was set to be at 0.05 (P value).

### 2.5. Consent and Ethical considerations

Ethical approval was provided by the medical research Committee of medical colleges, University of Sharjah under reference number REC-20-02-04-02-S. All participants were informed of the purpose of the study and their confidentiality was ensured. This study adhered to all ethical guidelines, including obtaining written informed consent from all subjects, questionnaires without signed consent were excluded from the study.

## 3. Results

### 3.1. Demographics and basic information

A total of 343 questionnaires were completed out of 370 distributed questionnaires. Hence, the response rate was 92.7%. The sample consisted of 195 males (56.76%) and 148 females (43.24%). Also, the most study participants were within the ages of (18-22) years (30.81%), participants over 40 years old were 26.22%, and 24.32% of the participants were within the ages of (23-29). whereas only a minimum number of participants were between (30-39) years old (18.65%). Based on the educational degree (39.19%) participants representing the majority have a bachelor's degree followed by (33.785) participants attaining a high school diploma. Next, master's degrees are the third highest educational degree obtained making it (11.08%). While college diploma makes it (1.54%) and the lowest education level in our questionnaire is primary school (1.08%). Regarding occupation, professional drivers/health professionals representing 95 participants (27.6%) of the total participants were 248 participants (72.4%) were not professional drivers/health professionals.

Most of participants experience driving more than 4 years (57.84%), however, (48.38%) of the participants drive in an average (less than 2 hours per day), while 38.11% of the participants drove between (2 and 5 hours per day) And only a minority (13.51%) drive (more than 5 hours in a day) which **usually** represents the professional drivers work routine.

### 3.2. Knowledge about basic FA measures

The table (number of Table 1) summarizes knowledge scores across various demographics. When comparing knowledge scores across different age groups, the highest knowledge was observed among individuals aged 18-22, with 34% scoring as 'Good Knowledge' and 29.5% scoring as 'Moderate Knowledge.' On the other hand, individuals aged 30-39 demonstrated a lower knowledge score in basic first aid, with 38.9% falling into this category. A significant relationship was found between current job/occupation and knowledge in our sample ( $\chi^2=33.752$ ,  $df=4$ ,  $P<0.001$ ). However, no significant differences were observed in knowledge based on gender, age group, educational degree, years of driving experience, or hours spent driving regarding basic first aid information in our sample.

**Table 1.** Distribution of Performance Metrics Across Different Demographic, Educational, and Behavioral Categories with Statistical Significance Results.

Performance	Poor	Moderate	Good	Pearson's Square	Chi-	P-Value
<b>Q2 Gender</b>						
Male	13 (72.2%)	112 (58.9%)	85 (52.5%)	=3.339, df=2		.188
Female	5 (27.8%)	78 (41.1%)	77 (47.5%)			
<b>Age groups</b>						
18-22	3 (16.7%)	56 (29.5%)	55 (34.0%)	=8.870, df=6		.181
23-29	6 (33.3%)	46 (24.2%)	38 (23.5%)			
30-39	7 (38.9%)	33 (17.4%)	29 (17.9%)			
40+	2 (11.1%)	55 (28.9%)	40 (24.7%)			
<b>Q3 What is the highest educational degree obtained?</b>						
Primary school	0 (0.0%)	2 (1.1%)	2 (1.2%)	=18.277, df=12		.108
Secondary school	3 (16.7%)	7 (3.7%)	5 (3.1%)			
High school diploma	8 (44.4%)	57 (30.0%)	60 (37.0%)			
College diploma	3 (16.7%)	25 (13.2%)	11 (6.8%)			
Bachelor's degree	4 (22.2%)	77 (40.5%)	64 (39.5%)			
Master's degree and above	0 (0.0%)	21 (11.1%)	20 (12.3%)			
Others	0 (0.0%)	1 (0.5%)	0 (0.0%)			
<b>Q4 Current work/occupation</b>						
Professional Drivers	6 (33.3%)	14 (7.4%)	2 (1.2%)	=33.752, df=4		.000
Health profession	0 (0.0%)	27 (14.2%)	30 (18.5%)			
Other	12 (66.7%)	149 (78.4%)	130 (80.2%)			
<b>Q5 Years of experience of driving</b>						
Less than 1 year	2 (11.1%)	23 (12.1%)	23 (14.2%)	=2.289, df=4		.683
Between 1 and 4 years	4 (22.2%)	52 (27.4%)	52 (32.1%)			
More than 4 years	12 (66.7%)	115 (60.5%)	87 (53.7%)			
<b>Q6 What is the approximate number of hours you spend driving per day?</b>						
Less than 2 hours	5 (27.8%)	98 (51.6%)	76 (46.9%)	=7.978, df=4		.092
between 2 and 5 hours	7 (38.9%)	70 (36.8%)	64 (39.5%)			
More than 5 hours	6 (33.3%)	22 (11.6%)	22 (13.6%)			

df: Degrees of freedom; p-value<0.05.

### 3.3. Knowledge about response in life-threatening situations

knowledge:

Knowledge of life-threatening situations in RTA is essential. Almost all the participants (97.03%) agreed that calling for help is an attitude to perform in RTA. Most participants (87.84%) chose that we need to make sure that the victim is still breathing by checking chest movement (71.90%). Checking that the victim is conscious was the next commonly chosen correct answer (86.49%) by the participants.

Wrong answers were there, such as (52.43%) of the participants wanted to move the patient to the hospital from the accident site which caused further complications in the victim's life. In addition, nearly a quarter (23.8%) think that providing fluid is beneficial for the victim. Participants chose the wrong practice over the 'I don't know' option which is not a safe attitude in RTA.

In road traffic accidents/ life-threatening situations, it is critical to know how to approach an injured human being. For instance, we assessed the participants' knowledge regarding stopping heavy bleeding from a wound. We found out that 47.3% of our participants chose applying pressure on the wound, which is the correct option. Then the next common option was firmly wrapping a cloth above the wound where 38.7% chose that. Then came the minority of the participants (3.8%) and the remaining percent of answers (10.27%) chose "I don't know".

Furthermore, we asked participants about their willingness to provide first aid in case of road traffic accidents. The answers were approximately distributed equally between yes (35.14%), no (34.86%) and uncertain (30.0%). To follow up the question, reasons for not having the will or being uncertain were mentioned. For instance, the majority of people (62.45%) are not willing to provide due to "lack of knowledge" they don't want to make the situation worse because they don't have an idea about first aid. and (14.77%) of participants "fear of legal consequences" which is an illegal to participate in first aid in the U.A.E without a certificate. (10.55%) because they feel nervous. While (9.28%) think that doing first aid is not their responsibility at all.

The initial response to witnessing a road traffic accident is a significant factor of assessment. The majority (61.35%) would respond to traffic accidents by "calling the ambulance" which is the correct practice, while (27.03%) want to call the police. 'Do nothing' (5.14%) wanted to not respond in case of a road traffic accident. (4.59%) wanted to provide first aid action. On the other side, (1.89%) wanted to transport the victim to the hospital.

**Table 2.** Participants' responses regarding knowledge of basic first aid knowledge.

	Correct Answers	Wrong Answers
Have you ever heard about first aid? (Yes)	92.7% (n = 343)	7.3% (n = 27)
Ambulance number in UAE (998)	49.7% (n = 184)	50.3% (n = 186)
The priority first aid action that can be done to a victim of a road traffic accident.		
a. Victims should be moved from the accident site (No)	67.3% (n = 249)	22.7% (n = 121)
b. Make sure that the victim is breathing properly (Yes)	87.84% (n = 325)	12.16% (n = 45)
c. Pour water on the victims to revive/refresh them (No)	54.2% (n = 200)	45.8% (n = 170)
d. Try to stop bleeding (Yes)	73.78% (n = 273)	26.22% (n = 97)
e. Try to give fluid to drink (No)	55.68% (n = 206)	44.32% (n = 164)
f. Transport victims to a hospital (No)	37.30% (n = 138)	62.7% (n = 232)
g. Call for help (Yes)	97.03% (n = 359)	2.97% (n = 11)
h. Check if the victim is conscious/ awake (Yes)	86.49% (n = 220)	13.51% (n = 50)

### 3.4. Attitude of the population toward FA

Participate in a free first aid course?

The majority (83.78%) are interested in attending a first aid course to gain knowledge and learn basic life support while only (16.22%) are not interested in attending a first aid course.

Last but not least, should all driving license holders be provided with first aid training? Almost eighty-six percent (85.95%) of participants agree that first aid should be provided along with a driving license to help prevent further injury, preserve life in case of car accident injury and only a small percentage disagree (14.05%) that first aid should be given with a driving license.

**Table 3.** Participants' responses regarding dealing with specific life-threatening situations.

	Correct Answers	Wrong Answers
Appropriate method to stop heavy bleeding in the arm	47.3% (n = 175)	52.7% (n = 195)
Willingness to provide first aid in RTA	35.14% (n = 130)	65.86% (n = 240)
Willingness to participate in a First Aid course	83.78% (n = 310)	16.22% (n = 60)
First aid training should be provided to all driving license holders	85.95% (n = 325)	14.05% (n = 45)

## 4. Discussion

In this study, we have assessed the knowledge and attitude of first aid among car drivers in Sharjah. Our results showed that almost all the participants (94.2%) indicated that they know what the term "first aid" means. However, almost one third (39.99%) did not know the correct ambulance number and almost half (52.43%) assumed that RTA victims could be transported to hospital without an ambulance.

A similar study conducted on in U.A.E on the general population showcased that almost half (54.2%) of the participants lacked sufficient knowledge about basic first aid.[2] With regards to attitude towards first aid, only one third of the participants indicated that they were willing to provide first aid to an RTA victim and the majority (83.78%) of participants were interested in attending first aid courses. These findings are consistent with a previous study done in Jordan. [14] Based on these results, we recommend providing first aid courses. especially targeting professional car drivers to equip them with the basic knowledge on how to react upon witnessing an RTA while waiting for the ambulance. As the study relies on self-reported information, this can cause recall bias. and respondents can also modify their answers on attitude and behaviors to meet the proper norms. Secondly, the study population was only in the Emirate of Sharjah and didn't include the rest of the Emirates.

Obtaining a driving license can be done without the need for first aid training according to the Regulation and rules in the U.A.E of the Road and traffic authority (RTA), on the other hand, in countries as Austria and Switzerland, obtaining a first aid certificate or completing specific first aid courses and training is a requirement to obtain a driver's license. [15]

Changing the rules in the future is beneficial, according to a study done in Egypt (Port Said) shows that, implementing a session about first aid to drivers in Port Said improved their knowledge. Before the session more than three fourths of the drivers had unsatisfactory knowledge about first aid and after completing all the sessions less than three quarters of them had satisfactory knowledge in all items of first aid. But the study showed that after 3 months of follow up knowledge dropped down due to forgetting. So not only implementing sessions and tests for drivers, but also follow-up and revision of knowledge and practices is needed. [16]

According to the Heart Association's Emergency Cardiovascular care committee skills encourage review and practice at least every 6 months. At least annually for life-threatening emergencies and periodically for non-life threatening. [17]

Another study done in northern Iran also concluded that 'The first aid training course for drivers is beneficial and helpful for the prehospital care system in road traffic accidents. In addition, it also showed that there is a drop in the fear of the participants in practicing first aid after obtaining a training course which will increase the quality of intervention in cases of road traffic accidents.

First aid training courses must be done by professionals because the quality of the course will differ in the outcome of the knowledge and practice. An Experience-based first-aid training 16 hours course focusing mainly on knowledge, skills, and the psychological setup in cases of road traffic accidents emergencies, showed better outcomes and remarkable differences in knowledge and skills of first aid of people who did normal first aid 4 hours courses.

To conclude, implementing a community program aimed at the entire population. Making the course compulsory would greatly enhance the participants' understanding and self-evaluated first aid skills [18]. But also, we don't need to neglect the quality of the course itself. Adding a well-developed course about multiple aspects of first aid would be beneficial not only to the driver's but also for the community itself. [19]

#### *4.1. Limitation of the study:*

In this study, we used a non-proportional convenience sampling method, our study was conducted in the city of Sharjah which limits the applicability of the findings among UAE.

Our target population were individuals above 18 years with a driving license which limits the generalizability of the study. There was no tool to refer or derive from in our questionnaire.

-Some taxi drivers refused to participate in our study as they were busy with work. On the other hand, some participants of taxi drivers have language barriers as they do not read or speak English or Arabic.

#### *4.2. Implications & future research*

The results suggest that most of the participants are willing to acquire knowledge of first aid and obtain first aid certificates; however, they were not willing to provide first aid in cases of RTA due to lack of knowledge and fear of legal consequences. The result of our study suggests the need to implement first aid courses along with driving license learning procedures provided by Emirates Driving license Institute. Such recommendations can reduce the severity of disabilities and death rates when applied in the appropriate manner.

In the future, research should explore if introducing a mandatory First Aid (FA) course can boost both FA knowledge and people's willingness to help. It's also important to consider how the timing of taking an FA course could impact outcomes, requiring further examination. Lastly, future studies should assess how various courses handle real-life RTA."

## **5. Conclusion**

This research underscores the crucial role of first aid in addressing the global public health challenge posed by road traffic accidents (RTAs). Conducted in Sharjah, UAE, the study reveals a significant lack of first aid knowledge among drivers. Despite a high awareness of the term, participants demonstrated deficiencies in essential knowledge, such as ambulance numbers and appropriate responses to life-threatening situations. The findings suggest a need for integrating mandatory first aid training into the process of obtaining a driver's license, aligning with practices in countries like Austria and Switzerland. While participants expressed a willingness to attend first aid courses, the study acknowledges limitations, including its sampling methods. The conclusion advocates for proactive measures, such as comprehensive training and policy adjustments, to enhance community responsiveness and reduce the severity of injuries in RTAs.

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