



ORIGINAL-ARTICLE

First aid for road traffic accident victims: knowledge and practice among the non-medical road users in Eldoret, Kenya.

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Abstract

Background: First responders to Road Traffic Accident (RTA) scene have the highest opportunity to save lives if they have knowledge on basic first. Understanding the gap in first aid knowledge and preparedness amongst the road users would assist stakeholders create awareness among road users on the principles and practices of first aid for trauma patients.

Objective: To evaluate knowledge, attitude and practice of First Aid by non-medical road users in Eldoret, Kenya. **Design:** Descriptive cross-sectional study **Setting:** Bus termini and roads in Eldoret, Uasin Gishu County. **Subjects/Participants:** Persons purposely sampled including Passengers in buses, matatus, boda-boda motor cyclists, Drivers and Pedestrians. **Results:** Males sampled were 363 (75%) of respondents whereas females were 121 (25%) ratio of 3:1. Fifty five percent (55%) had attained high school education. Only 21% of the respondents had been trained in first aid. Majority (17.7%) of the respondents said they could assist crash victims by pulling them out of the wreckage and rushing them to the nearest hospital.. With regard to a victim not breathing, 40% of the respondents said they would open airway correctly so and give two breaths, the rest gave wrong responses. For stopping bleeding patients, 81% said they would apply pressure on the bleeding site while 19% did not know what to do. Over 80% of the respondents understood the benefits of CPR to the injured. **Conclusion:** This study revealed gaps in knowledge, attitude and practice of first aid principles among non-medical road users. First Aid continuous education should be offered to all road users as first responders to road traffic accident victims.

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1 | INTRODUCTION

First aid is the immediate treatment of any injury or sudden illness before seeking professional medical care. The trend of Road traffic injuries (RTI) in Kenya and Africa on whole is worrying with increasing fatalities and injuries at 26% and 46.5% respectively from January 2015 to January 2020 (1-2). Low income countries do not have an elaborate first response team especially in the rural areas. The goal of first aid (FA) is to prevent mortality,

prevent further deterioration of injuries and/or promote recovery (3-4). The first responder on the site of accident is expected to preserve life, prevent further injury, and ensure recovery (5). Mokom et al study in the North West region of Cameroon demonstrated that knowledge and practice among professional intercity drivers is inadequate despite high scores for attitude towards FA (6). The bystanders may be well intentioned to save lives at

the scene of injury but limited in the knowledge and skills necessary for achieving the goal of FA which is to preserve life, prevent further illness or injury, and promote recovery (7). Sadhana et al in their study concludes that FA knowledge is not universal (8). Perhaps targeted training program initiated by stakeholders, can lead to significant improvement in first aid knowledge and skills (9). This study was carried out with the aim of assessing the knowledge, skill and practice among non-medical road users the regarding first aid in Eldoret town, Kenya.

2 | MATERIALS AND METHODS

Study Design: descriptive cross-sectional study conducted for a year from June 2018 to May 2019

The researchers sampled road users including drivers of buses, taxis, mini buses and motor cycles and pedestrians, in selected Eldoret town termini
Study area/setting: The study was carried out in Eldoret town, Uasin-Gishu County.

Study population: Respondents all persons found at road termini in Eldoret town Uasin-Gishu County and who had little or no medical training within the study period,

Sampling technique: Purposive sampling was used to recruit respondents among road users. Drivers were identified by their uniforms at the bus termini while cyclists were approached as they awaited customers at selected waiting stages.

Passengers were approached as they boarded or alighted from the buses/minibuses or motorcycles while the pedestrians were approached as they walked along the road. An attempt was made to recruit equal number of respondents across these categories these categories of road users.

Sample size: Four hundred and eighty four participants were enrolled into the study

Sample technique; non probability purposive sampling technique was used

Selection Criteria

Inclusion Criteria:

1. Willingness to participate and gave written verbal informed consent to take part in the study
2. Drivers, passengers, cyclists or pedestrians with no health professional training.

Exclusion Criteria

Failure to complete the interview administered questionnaire

Mentally challenged individuals

2.1 | Data Collection

Data collection involved interviews and filling of structured questionnaires. Information sought included socio-demographics, level of training in first aid', and to assess the level of knowledge in FA, skill and practice on opening the airway, supporting breathing. We focused on knowledge of personal and casualty safety, extrication of the patient, control of haemorrhage, whether they understood how to do it correctly, incorrectly, or nothing at all. For drivers we wanted to in addition whether they had driving license or not.

2.2 | Data Analysis

Data was stored, cleaned and analyzed using SPSS version 17.0 software to produce frequencies in form of tables and graphs. Qualitative data were analyzed and grouped into thematic narratives. Chi-SQUARE, ANOVA and student t-test were used to analyse any associations.

2.3 | Ethical Consideration

Ethical approval was sought and received from the Moi University's institutional review board, (IREC). A written informed consent was received from the participants. Privacy, confidentiality and anonymity of respondents were guarded with outmost care. Scientific objectivity of the study was maintained with honesty and impartiality.

3 | RESULTS

A Total of four hundred and forty three respondents were studied.

Social demographic information

The mean age of the road users were 32 (26.73+4.9). The minimum age recorded was 17 years while the maximum was 49 years old. The Male to female ratio was 3:1. Males were 363 (75%) whereas females were 121 (25%).

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Education

The study showed that two hundred and sixty seven (55.7%) of the respondents had secondary level of education, Primary level at 104 (21.7%), Graduate 100 (20.9%) and those with no formal education were 13 (1.7%). Out of 297 drivers interviewed, 145 (48.8%) had no driving license (Table 1).

Table 1: Summary of demographics: level of education and driving licensure

SEX		
Male	363	75
Female	121	25
LEVEL OF EDUCATION		
High school	267	55.1
Primary	104	21.5
Graduate	100	20.7
None	13	2.7
DRIVERS		
(LICENCE)		
None	145	48.8
Class A	41	13.8
Class B	34	11.4
Class C	31	10.4
Heavy commercial	25	8.4
Motorcycle Riders	21	7.1
How long Has been		
Licensed to drive.		
1-2yrs	73	54.1
3 -5 yrs	31	23
0-1 yr	29	21
>5 yrs	2	1.5

Formal training on first aid

Our findings indicated that 345 (79%) of those who responded to this question had not been trained on first aid principles and practice. Those trained were 89 (21%).

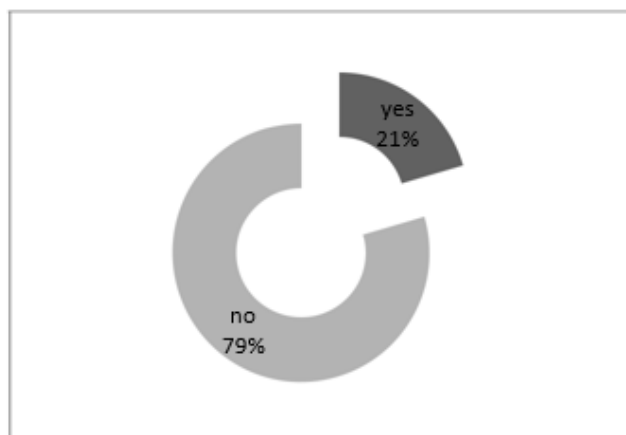


Figure 1: Had Formal training in first Aid Assisting crash victims at accident site.

Table 2 below shows that most 20(17.7%) of respondents assisted crash victims by pulling them out of the wreckage and rushing them to the nearest hospital while 19(16.8%) Respondents said they would Check safety of scene, then assess and manage breathing problems, pulse, severe bleeding before taking victims to the hospital .The table below has the rest of responses (Table 2).

Table 2: How respondents would assist a witnessed crash victim on different injury scenarios.

How victims were assisted	Frequency	Percent
By pulling them out of the wreckage and assisting them to the nearest hospital	20	17.7
Checked safety of scene, then asses and manage breathing problems, pulse, severe bleeding before taking victims to the hospital	19	16.8
Arrested bleeding of the victim then called for help	17	15.0
Assess and control crowds, then called for ambulance	14	12.4
Transport victims to the nearest hospital	14	12.4
Managed the crowd and ensured the accident scene was safe before calling for help	11	9.7
Applied bandage on the injured place and called the police	9	8.0
I wore gloves and helped the victims wiping blood and administering pain killers to them	6	5.3
Removing the broken glasses and applying bandage on the Injured area.	3	2.7
Total	113	100.0

When a victim is bleeding profusely how long will he stay alive if First AID is not administered to stop the bleeding?`

Respondents indicated that 52.5% of the respondents said it would take one hour, followed

by don't know (17.9%), four minutes (10.9%), six hours (9.7%) and one minute (9%).

If a victim is not breathing but moving what should you do to improve breathing while someone has gone for help?

About 40% of the respondents said that they would open airway and give two breaths, repeated if no spontaneous breathing present till help arrives, followed by 29.7% who indicated that they would check pulse if present and do nothing till help arrives. A lower number of 2.8% and 3.2% didn't know and would stop a car and quickly rush to nearest hospital as indicated in Figure 2 below

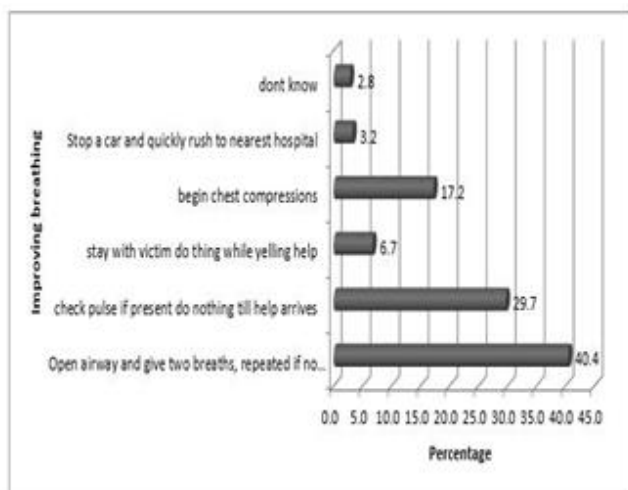


Figure 2: *If a victim is not breathing but moving what should you do to improve breathing while someone has gone for help?*

An accident victim has a cut in the neck and is spurting out blood with each heartbeat .What should you do?

Majority (40.7%) would apply pressure bandage immediately, 40.5% would use direct pressure on wound directly and apply pressure bandage around it, a lower number of 3.2% would apply tourniquet as soon as possible.

A piece of glass is stuck in a victim's chest, patient talking. What should you do at the site of accident?

Majority of the respondents (37.7%) indicated that they would keep him calm as you call for help (911/ambulance), this was followed by 36.2% who said they pull the victim out and put pressure bandage, 22.3% would assist the victim to remove the glass and call 911 and 3.9% would take the patient to the nearest hospital.

Knowledge on when to start cardio pulmonary resuscitation on adult victim.

47.3% said that if the victim has pulse but difficult breathing, a lower number of 6% mentioned both unconscious but breathing and don't know (Figure 3).

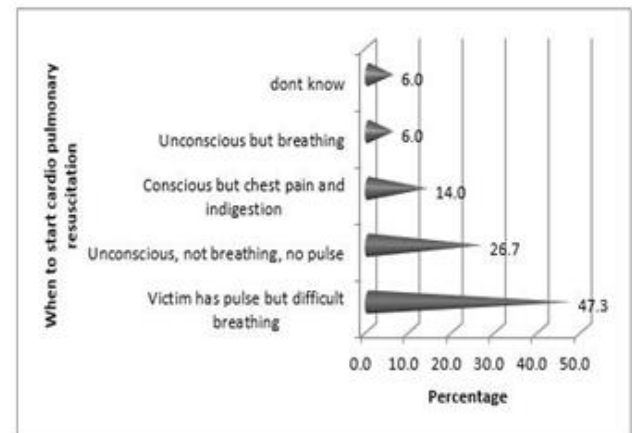


Figure 3: *when does one start cardio pulmonary resuscitation on adult victim?*

Main purpose of cardiopulmonary resuscitation

The response revealed that 56% of the respondents said it makes the heart pump again on its own, 29.3% said it will provide brain with oxygen till aid arrives, and 3% said they would make the victim angry.

4 | DISCUSSION

Independent studies by World Bank and WHO in the 1990s estimated that about 500,000 fatalities and 15 million injuries occur annually worldwide as a result of road accidents (10). But the most interesting aspect of these studies was the fact that 70% of the fatalities and injuries occur in developing countries. (11) Kenya has one of the highest road fatality rates in Africa estimated at 68 deaths per 10,000. In Kenya, daily news bulletins carry at least an episode of road crash involving a vehicle only, a vehicle and pedestrians but in each case we hear innumerable loss of life in an ever increasing order. Fatal road accidents in Kenya and the rest of the developing world are bound to occur but the question is how to minimize deaths as much as possible through care at site. First aid by the bystander who is trained correlates better with knowledge application towards CPR (12). Abdulgafoor et al evaluated the health burden and risk factors of traffic accidents in Kenya. (13) Human factors which include education and

attitude contribute to over 70% as main causative factor for road traffic accidents.

In our study, majority had attained high school level of education at 267 (55.7%) and 1.7% had no formal education. The roads present unique conditions for drivers rendering standard education in class applicable for road users. One would expect that the drivers training in the driving schools would also have first aid principles so they would actually save lives when placed at the scene of incident. Data from this study shows that 73 (54.1%) of the respondents had trained and acquired driving licenses with experience of 1 to 2 years while 145 (48.8%) of the drivers were not licensed to drive on Kenyan roads. Further analysis of data indicated that those without licenses 134 (92%) were motorcyclists and 11 (8%) were motor vehicle drivers. From the study 345 (79%) of the respondents had not been trained in first aid. According to Mock et al basic first aid training for drivers might help in especially where emergency response teams are not available (14) depending on how the crash victims were managed by first responders determine the ultimate outcomes. Bystanders at the scene of accident may intervene timely if they can promptly recognize a victim who needs CPR. It goes without saying that CPR must be done efficiently and effectively to yield a good outcome (15). It takes one who is trained on the ability to diagnose a situation which needs intervention or call for urgent help. According to Wissenberg M, CPR by the bystanders is associated with increased rates of survival especially the first golden hour (16). In developing countries, the early initiation of chain of survival could best be achieved by training the community in early identification of life threatening conditions and initiation of CPR for better effective outcomes. Bystander assisted CPR is the real need of the hour, if the by-stander has the necessary knowledge and skills to intervene.

The airway and cardiovascular compromise leads to poor outcomes if not stabilized early; this is why basic knowledge on CPR is of essence. Fifty six percent of the respondents said CPR makes the

heart pump again on its own, 29.3% said it will provide brain with oxygen till aid arrives. The remaining respondents had no idea. This response from laymen is encouraging and with little training many would align their knowledge with CPR. Larson et al contends that intensified first aid training can lead safer and adequate victim care at traffic crashes (17).

5 | CONCLUSION

This study revealed gaps in knowledge, attitude and practice of first aid principles among road users. First Aid education should be offered to all citizens in the community and probably made mandatory in driving schools. Refresher courses, and drills on handling crash victims should be offered to drivers and other road users as determined by the authorities.

LIMITATION OF THE STUDY

The Study was carried out in one town and so the findings may not be generalized for the whole country and region. However the study brings out important gaps like many unlicensed drivers especially motor cyclists who are many on the Kenyan roads.

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