



RESEARCH ARTICLE

ASSESSMENT OF BYSTANDERS PREPAREDNESS AND KNOWLEDGE IN TRAUMA PATIENT MANAGEMENT: A STUDY IN KAKAMEGA COUNTY, WESTERN KENYA

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Manuscript Info

Manuscript History

Received: 27 June 2023

Final Accepted: 31 July 2023

Published: August 2023

Key words:-

Bystanders, Trauma, Prehospital, Kakamega County

Abstract

Objective: The objective of the study was to assess Bystanders' capability to handle trauma patients at the prehospital environment in Kakamega County, Western Kenya.

Design: The study utilized a descriptive cross-sectional design.

Setting: The study was carried out in four Sub-counties in Kakamega County.

Sample: Multistage sampling was used to select a sample of two hundred and fifty-six participants (n = 256)

Analysis: Data was analyzed using measures of central tendency and dispersion.

Main outcome measures: Demographic characteristics, Level of knowledge, attitude and practice among bystanders towards trauma patients.

Results: Most of the participants (44.5%) were between the ages 18-27 years old, majority 74.6% being of male gender. 90% respondents had witnessed injuries with a number of accidents witnessed averaging 1-5 (65%) in a period of 3 months. While 22% responded by taking the victims to the hospital, nearly half of the participants either called the police (29%) or stared at the incident (20%). Majority (51.2%) lacked confidence in handling persons with obstructed airway, while (46.7%) were abt confident in handling patients with bleeding. 64.8% of the respondents lacked knowledge of contacts for emergency response. Availability of Emergency care equipment and supplies was 20% at Lurambi, with the remaining three sub-counties having lowest at (6.7%).

Conclusion: There is inadequate knowledge of trauma care among Bystanders and lack of essential emergency care equipment and supplies in management of trauma patients in the prehospital environment of Kakamega County.

Recommendations: The County government through the Ministry of Health to train first responders on Basic First Aid and Cardiopulmonary resuscitation and establish booths where bystanders can access equipment and supplies for trauma care.

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Introduction:-

Injury is a significant health problem worldwide. More than 9 people die every minute from trauma and 5.8 million people of all ages and economic groups die every year from accidental injuries (Holtz, 2016). Kenyan residents have been victims of many injuries related to building collapses, fire outbreaks, terrorism and post-election unrest (Huho, 2016). Road traffic accidents are the leading cause injury (36%). In Kenya. (Gatheka, 2018). In Kakamega, motor cycles are the common means of public transport and equally the traffic accidents (Khanbhai, 2012).

A bystander is person who is present at an event or accident but is not involved. The first person to approach a scene will be more likely a coworker, stranger, family member or any bystander. There are over 350, 000 cases of trauma worldwide' if a bystander offers immediate care, they can triple the chance of survival. 90 % of cardiac arrest victims die however 9 out of 10 of the victims that receive Cardiopulmonary resuscitation within the first minute survive. World Health Organization recommends training bystanders as the initial step toward establishing formal emergency medical services. The bystanders are trained to stop to help, call for help, assess the victim, start the breathing and to stop the bleeding. No assessment has been conducted to address the capability of bystanders to handle trauma patients in Kakamega county.

Motorcycle transport is commonly used in Kakamega County. This mode of transport results to many road accidents leaving many injured or dead (Luchidio, 2013). Many trauma victims are taken to health facilities by bystanders, who have not been trained on resuscitation and transportation of trauma patients (Hadley, 2015). Deficiencies in resources and organization result to increased burden of disability, morbidity and mortality. Patient's chances of survival are increased if they receive care within the shortest time after severe injury (Mock, 2019).

Most injury deaths occur within the golden hour, that is the first 60 minutes after injury. Literature has shown that more trauma deaths occur in prehospital setups in the low and middle developing countries. This study therefore aims to provide further insight on the capability of the bystanders to handle trauma patients in the prehospital setup at Kakamega County.

Materials and Methods:-

The study was conducted in four sub-counties: Lurambi, Navakholo, Mumias East and Shinyalu in Kakamega county, Western Kenya. Ethical approval was obtained from Masinde Muliro University of Science and Technology Ethics and Review Committee and NACOSTI. Authority was obtained from the Kakamega County Health Department.

Study Design:

Descriptive cross-sectional design was adopted using quantitative methods.

Study Location:

Four sub-counties: Lurambi, Navakholo, Mumias East and Shinyalu in Kakamega county Kenya.

Study duration:

Six Months.

Sample size:

256 respondents.

Sample size calculation:

The sample size was calculated using Fisher's et al. method. An additional 10% was added to cater for non-response.

Subjects & selection method:

This study targeted bystanders in Kakamega County. The study used Cluster sampling method in selecting the sub-counties and simple random sampling to select respondents in the selected sub counties.

Inclusion criteria:

1. Those above 18 years because they can give consent
2. Those who operate from places where there is a potential risk of trauma

Exclusion criteria:

1. Those who did not give consent.

Procedure Methodology:

Quantitative data was collected using structured questionnaires and Observation checklists for bystanders.

Statistical Analysis

The collected data was compiled and entered into an excel database for analysis using Statistical Package for the Social Science software version 26.0. Descriptive statistics were used to present the data.

Results:-**Table 1:-** Background characteristics of respondents (n=256).

Variable	Response	n	%
Age in years	18 – 27	114	44.53
	28 – 37	84	32.81
	38 – 47	32	12.50
	≥ 48	26	10.16
Gender	Male	191	74.61
	Female	65	25.39
Marital Status	Single	76	29.69
	Married	170	66.40
	Widow/Widower	9	3.52
	Separated	1	0.39
Level of Education	Informal	8	3.13
	Primary	81	31.63
	Secondary	105	41.02
	Tertiary	62	24.22
Sub-County	Shinyalu	83	32.42
	Mumias East	72	28.12
	Lurambi	74	28.91
	Navakholo	27	10.55

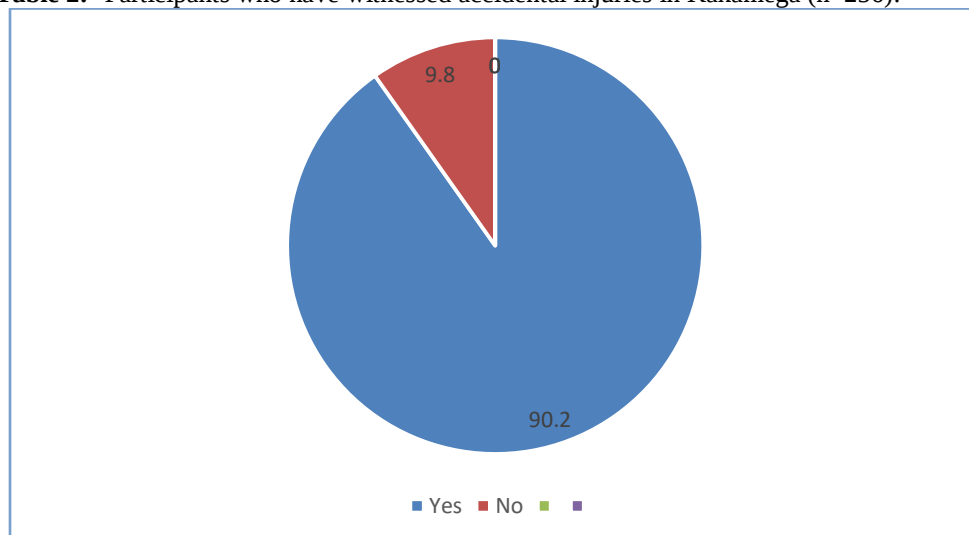
Table 2:- Participants who have witnessed accidental injuries in Kakamega (n=256).

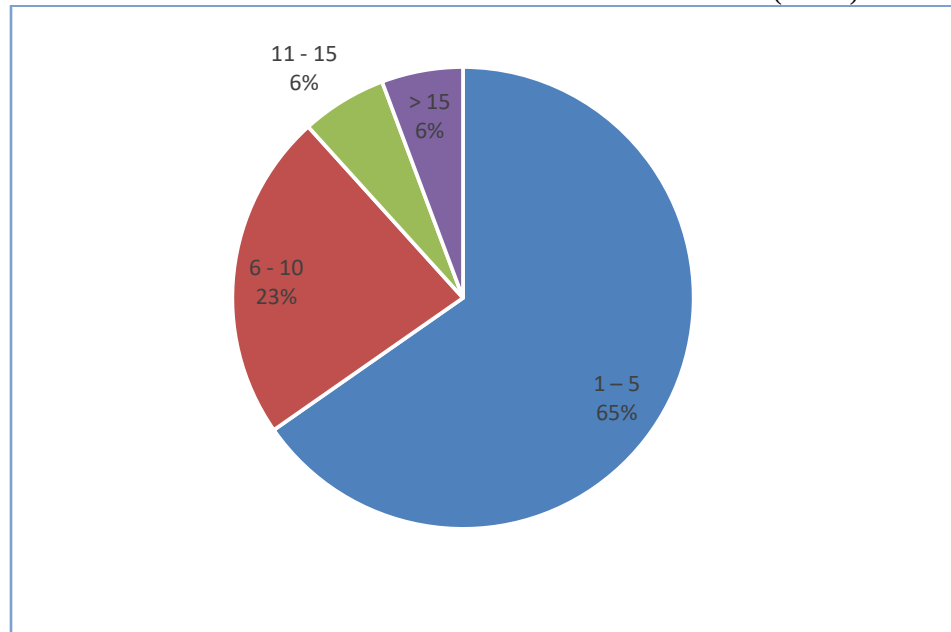
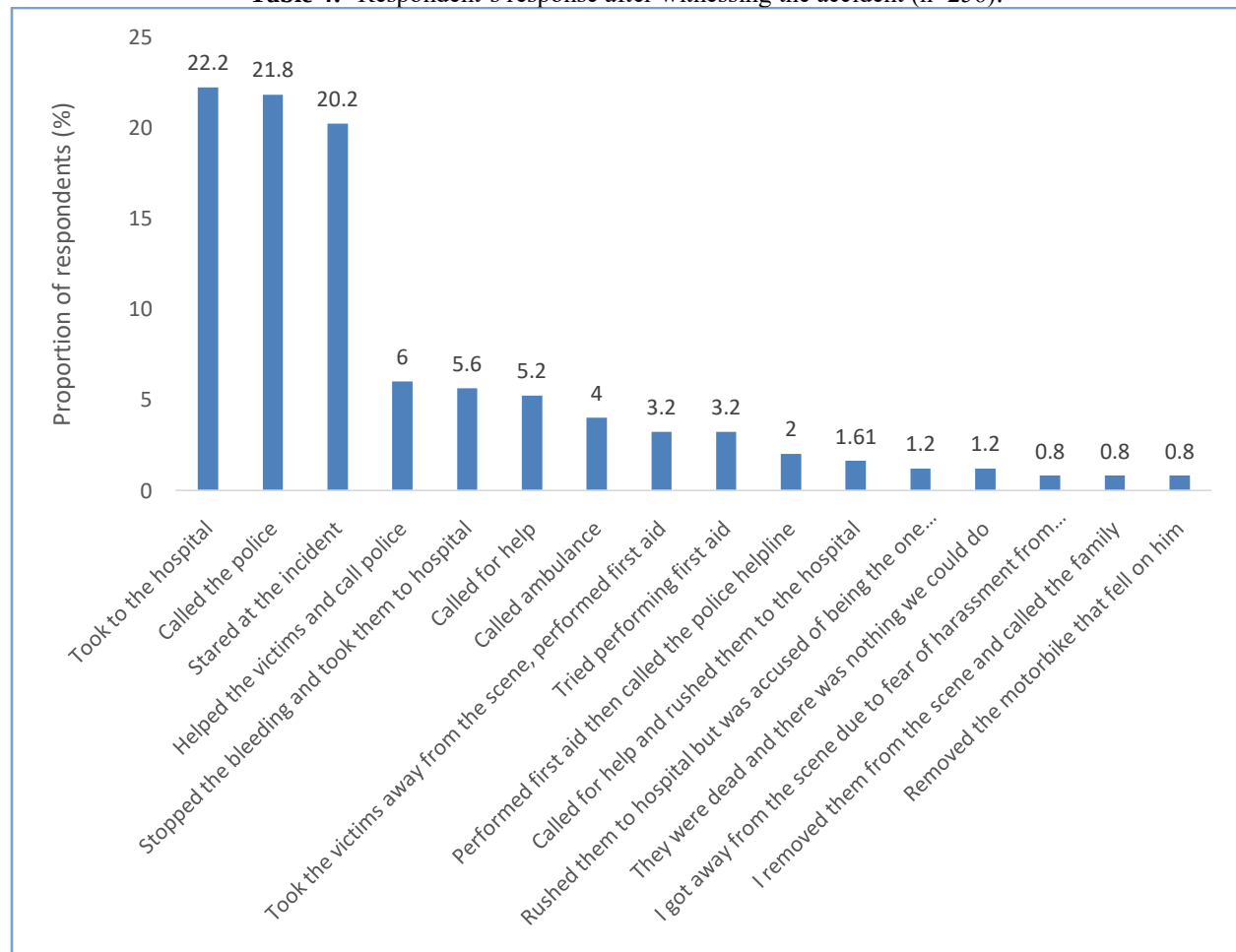
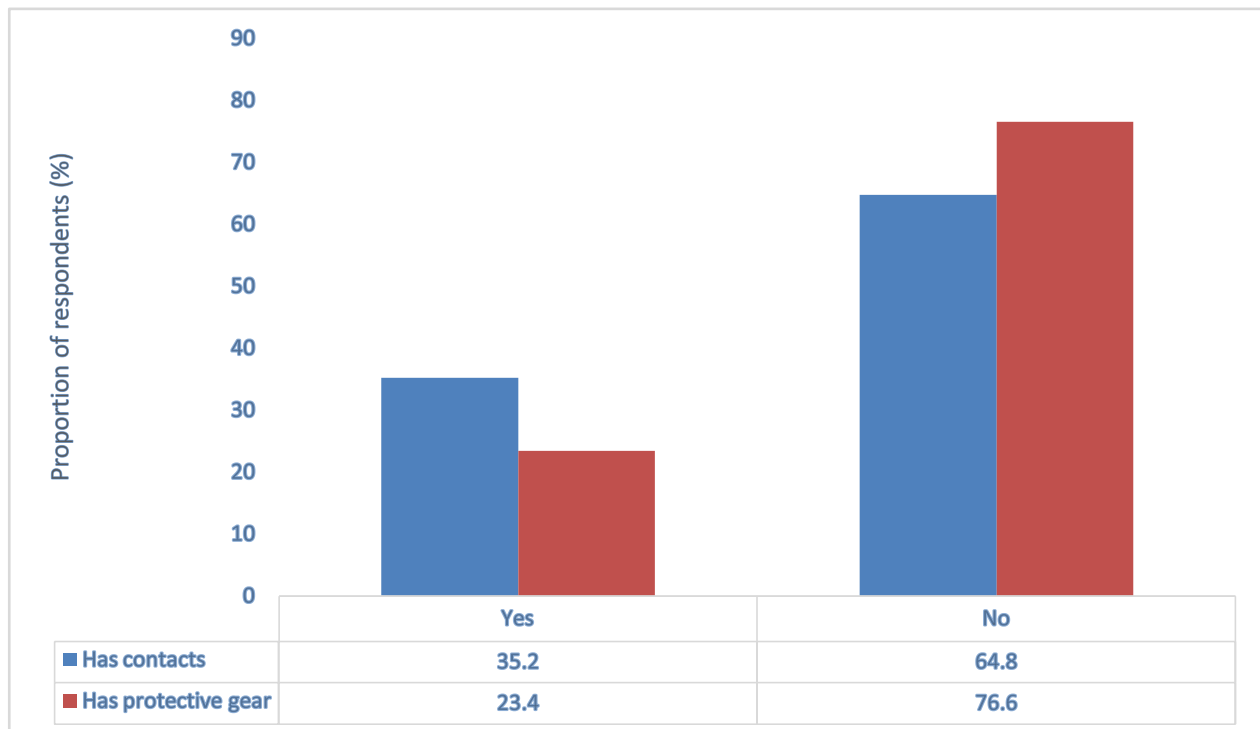
Table 3:- Number of accidents witnessed in the last 3 months (n=256).**Table 4:-** Respondent's response after witnessing the accident (n=256).

Table 5:- Level of confidence (n=256).

Variable	Response	n	%
Confident you feel dealing with a person with multiple physical cuts	Not confident	92	35.9
	A bit confident	117	45.7
	Confident	30	11.7
	Very confident	17	6.6
Confident you feel dealing with a person with fractures	Not confident	99	38.7
	A bit confident	107	41.8
	Confident	34	13.3
	Very confident	16	6.2
Confident you feel dealing with an injured person with obstructed airway	Not confident	131	51.2
	A bit confident	94	36.7
	Confident	22	8.6
	Very confident	9	3.5
Confident you feel dealing with an injured person with breathing problems	Not confident	115	44.9
	A bit confident	97	37.9
	Confident	28	10.9
	Very confident	16	6.2
Confident you feel dealing with an injured person with bleeding	Not confident	73	28.5
	A bit confident	120	46.9
	Confident	46	18.0
	Very confident	17	6.6

Table 6:- Knowledge about contacts to call and possession of protective gear (n=256)**Table 7:-** Emergency care equipment and supplies availability by sub-county.

Equipment / Supplies	Navakholo	Lurambi	Mumias East	Shinyalu
Kit bag	No	No	No	No
Gloves	No	No	No	No
Towel	No	No	No	No

Fabric Ties	No	No	No	No
Wooden Boards	No	No	No	No
Gauze	No	No	No	No
Bandages	No	No	No	No
Tourniquet	No	No	No	No
Plastic or glass goggles with side shields	No	No	No	No
Light reflective clothing	Yes	Yes	Yes	Yes
Flags or other traffic control devices	No	Yes	No	No
Torch plus batteries reflector or candles	No	Yes	No	No
Soap or bactericidal foam for handwashing	No	No	No	No
Cleaning solution	No	No	No	No
Local emergency contacts	No	No	No	No
#Yes	1 (6.7%)	3 (20.0)	1 (6.7%)	1 (6.7%)
#No	14 (93.3%)	12 (80.0%)	14 (93.3%)	14 (93.3%)

Discussion:-

The results of this study established that the bystanders were not confident in handling patients with physical cuts (35.6%), fractures (38.7%), obstructed airway (51%) and bleeding (46.7%). Majority of the bystanders did not attempt to assist the trauma victims and only called the police (29%) or stared at the victims (20%). In addition, most of the respondents (91%) were not knowledgeable on emergency contacts. WHO (2018) has emphasized the importance of lifesaving interventions as such opening an obstructed airway, assisting breathing and applying direct pressure to a wound to reduce external bleeding as these first minutes after an injury occurs represent a window of time during which potentially life-saving measures can be initiated and potentially influence the likelihood of an injured individual to either live or die. The findings of the current study are comparable to a study done in India by Apoorva et al (2015) that found prehospital care in India is often poorly executed or nonexistent with up to 80% of trauma patients receiving no care from lay responders. In contrast, a study by Bakke et al (2015) found that most prehospital patients received the correct care from lay responders. The difference could be attributed to availability of a robust emergency medical care service systems, availability well stocked first aid booths and frequent first aid training for lay respondents in their study area.

The study further established that there were inadequate resources to handle trauma patients across all the four sub counties in which the study was carried out. Alibhai et al. (2019), in their study also found out that inadequate resources was one of the greatest barriers to effective prehospital care with resource limitation ranging from consumables to analgesia, imaging to specialist services. The current study and Alibhai et al study were both conducted in low and middle level income countries and the results could be attributed to general resource scarcity in these areas.

Conclusion:-

The study established that there is inadequate knowledge of trauma care among first responders and lack of essential emergency care equipment and supplies in management of trauma patients in the prehospital environment of Kakamega County.

Recommendations:-

The County government of Kakamega through the Ministry of Health should train first responders on Basic First Aid and Cardiopulmonary resuscitation and establish booths where bystanders can access equipment and supplies for trauma care.

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