ORIGINAL RESEARCH

Prehospital Emergency Care: A Cross-Sectional Survey of First-Aid Preparedness Among Layperson First Responders in Northern Uganda

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Background: Uganda has a high incidence of road traffic accidents and high mortality rates, yet lacks a mature prehospital emergency care system. Our study addresses this gap by assessing the experiences, training, and confidence in providing first aid (FA) among diverse layperson first responders in Northern Uganda, expanding beyond previous research, which was limited to Central Uganda and specific occupational groups.
Methods: We conducted a cross-sectional survey among layperson first responders of various occupations in Gulu City, Acholi sub-region, Uganda. Data on socio-demographics, training, experiences, knowledge, and confidence in FA were collected.
Results: We included 396 participants, of whom 81.6% (n=323) were male, 47.0.6% (n=186) were aged 21–30 years, 59.3% (n=235) had obtained a secondary level of education, 23.7% (n=94) were commercial motorcyclists, and 45.7% (n=181) had work experience of >5 years. The majority (85.4%, n=338) had witnessed acute illness/trauma. Accidents/bleeding were the most commonly witnessed cases (68.6%, n=232), followed by burn injuries (10.1%, n=34). Most participants (52.3%, n=207) had attended FA training. Only 20.5% (n=81) had obtained an above-average score (≥70%). The majority (67.9%, n=269) were confident in providing FA. Lack of knowledge and skills (61.4%, n=78), fear of taking health risks (18.9%, n=24), and legal implications (7.1%, n=9) were the major reasons for not being willing to confidently give FA. Factors associated with above-average knowledge were tertiary education and being confident in providing FA, while training in FA and prior experience in giving FA were associated with confidence in giving FA.
Conclusion: In this study, laypeople in Northern Uganda exhibited a high level of FA training. However, low confidence in providing FA is attributed to inadequate knowledge, fear of health risks, and legal concerns. Therefore, future efforts should focus on assessing FA practices in diverse regions and promoting formal FA training.
Keywords: first aid, laypeople, prehospital emergency care

Background

The prognosis of both medical and trauma emergencies can be significantly improved if proper care is initiated early enough, which can be on the scene or during transportation to the hospital,[1] but this can be challenging in a setting with no or minimally developed formal prehospital emergency care systems.[2] Prehospital care involves healthcare services given to patients with emergency conditions before reaching hospital. A survey of mortality in three different countries with varying economic levels revealed that the majority of deaths occurred in prehospital settings, indicating the importance of first aid (FA) in improving outcomes.[3]

Trauma accounts for more than 16% of the global burden of disease.[4] It is predicted that by 2030, road traffic accidents will be the third leading cause of death, well ahead of myocardial infarction, and, more significantly, one of the leading causes of disability-adjusted life-years lost globally.[5] Over 25% of injury deaths are from road traffic accidents, and 90% of mortality from trauma occurs in low- and middle-income countries with poor prehospital care.[6,7]

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Preventive measures, especially in trauma from road traffic accidents, such as environmental modifications, improved engineering of motor vehicles and other products, safe behaviours, and enforcing traffic rules and regulations, are of great priority. However, identifying deficiencies in treatment to improve the effective initial care provided to the victims should not be undermined as this can reduce mortality as well as morbidity in already injured victims.[8–10] A systematic review by Orkin et al, assessing the benefits of providing layperson FA responders for emergencies in developing countries and underserviced areas, which included 34 studies from low-income countries, found that this approach could offer benefits.[11] In India, a survey of practice and perception of FA among lay first responders revealed that 81.4% of study participants cited a lack of knowledge and skills as one of their reasons for not providing FA to victims of road traffic accidents at the scene.[12]

One of the major barriers to the provision of FA by lay personnel as first responders is a lack of practical skills. Riegel et al confirmed this in a survey of factors that could hinder lay personnel from giving FA to cardiac arrest patients.[13] However, a randomized control trial, which assessed whether training can overcome barriers to layperson first responders in emergencies, found that there was not much difference in responding to and seeking for help for cardiac arrest patients between those who had basic FA training and those who did not.[14] We still believe that some level of confidence is gained through training. In Saudi Arabia, students trained in FA were found to have better knowledge of and attitudes towards FA.[15]

Training of laypeople in FA should be for everyone, including school children and students in higher education institutions. Bollig et al piloted training of young primary school children between 6 and 7 years of age, and found significant differences in the correct assessment of consciousness, breathing, and remembering the emergency telephone number to call for help.[16] Similar training was also carried out in other places.[17] Such training can build positive attitudes and interest in providing FA in the community when started early. Such training could be made compulsory in some institutions, such as driving schools, where learners are trained in basic FA as part of the curriculum.[18,19]

In Uganda, victims of road traffic accidents are often transported in ordinary public or police vehicles and motorcycles by relatives or well-wishers who are not formally trained in FA. Training of laypeople as first responders was piloted in Kampala, where about 300 laypeople (taxi drivers, police, and community members) were trained and followed up to assess their knowledge retention and application of knowledge, and an estimate of cost was calculated. The results showed that there was significant knowledge retention and the trainees reported having applied at least one of the skills in which they were trained.[20] The cost was also feasible. From this research, the authors recommended that the training could be scaled up to include many more people. Local medical students in various regions could be used to conduct such training.[21] Similar training was also provided in Eastern Uganda, where taxi riders who were taught an FA curriculum realized significant improvement and provided assistance in terms of scene management, airways, breathing and circulation, especially bleeding control.[22] It is rare for any such training to have been provided in Northern Uganda. However, people in various occupations receive some training on their courses; for example, police are given basic FA training, some drivers have mandatory training in FA before being employed in some organizations, and others may have received training from elsewhere. We therefore need to assess these categories of lay personnel, whether trained or not trained, and determine their experience and knowledge of FA, and their confidence in providing FA.

For FA to achieve effective clinical benefits at the prehospital stage, it should be accompanied by a good continuum of care, with good ambulance systems equipped with trained personnel, and a good emergency department at the receiving health facility, with appropriate equipment and personnel; however, Uganda is still in its nursery stage, and has a long way to go to reach the level of advanced healthcare systems. Since there is enough evidence for the benefits of FA offered at the prehospital stage by laypeople,[11] it is prudent that we obtain baseline knowledge on the situation in Northern Uganda, and hence the need for this study. The findings from this study will add to the existing knowledge on prehospital FA by layperson first responders in Uganda, and will be helpful in guiding policy makers in developing prehospital emergency care services, including policies such as mandatory basic FA training in education and training institutions such as universities and driving schools, and organizing community-level FA training for groups such as Boda-Boda (motorcycle) riders and taxi drivers.

There are minimal data from other regions, including the Northern region of Uganda, about the current level of community awareness and knowledge of basic FA, whether laypeople are practising any form of basic FA, and the skills and knowledge that they have to help acutely ill patients, including trauma victims, in Northern Uganda. So, before

judging a book by its cover, we ought to find out whether laypeople in this region have knowledge and actually practise basic skills in FA as first responders. This study therefore aimed to assess experience, training, and confidence in providing FA among layperson first responders with various occupations in Northern Uganda.

Materials and Methods
Study Design
We conducted a cross-sectional study between June and November 2023.

Study Setting and Population
The Republic of Uganda is a landlocked country in East Africa. It has four regions: Central, Eastern, Northern, and Western regions. The Northern region is divided into four sub-regions: Acholi, Lango, West-Nile, and Karamoja sub-regions. Each sub-region has one city; Gulu City for Acholi sub-region, Arua City for West-Nile sub-region, and Lira City for Lango sub-region. The study was conducted in Gulu. Laypeople have various occupational backgrounds. We purposefully selected seven categories of occupation, based on the assumption that they are more prone to witnessing trauma and other forms of acute illnesses than people in other occupations. These categories were: 1) police, 2) commercial motorcyclists (Boda-Boda), 3) commercial drivers, 4) street vendors, 5) military personnel, 6) teachers, and 7) construction workers.

Eligibility Criteria
All those aged 18 years and above, and who fell into the selected categories of occupation, who lived or conducted their routine occupational activities within Gulu City, and who consented to participate, were recruited until the allocated sample size in each stratum was reached.

Sample Size
Since there has been no previous study to estimate the level of knowledge and practice of FA by non-trained lay responders in Uganda, a worst-case scenario where 50% of laypeople are assumed to have basic knowledge as well as practising FA in the community was assumed.

Applying the formula

Sample size = $[(Z_{1-\alpha/2})^2 \ P \ (1-P)]/d^2$

where:

$(Z_{1-\alpha/2})$ is the standard normal variable, taken as 1.96 at 5% type 1 error

P is the expected proportion with knowledge and practising FA in the community, assumed to be half (0.5)

d^2 is the absolute error of precision of 5% (0.05)

Sample size = $[(1.96)^2 * 0.5(1-0.5)] / (0.05)^2$

= 384.16 ≈ 385

Plus an extra 15 to account for possible invalid data.

Therefore, a total sample size of 400 respondents was interviewed.

Sampling Method
The four sub-regions of Northern Uganda were considered as clusters. Using random selection, Acholi sub-region was selected. The study was conducted in Gulu City in the Acholi sub-region. Occupations of interest were stratified into seven categories: 1) police, 2) commercial motorcyclists (Boda-Boda), 3) commercial drivers, 4) street vendors, 5) military personnel, 6) teachers, and 7) construction workers. Based on observations of the numbers, each stratum was allocated a number of respondents of 50, with the exception of Boda-Boda riders, who were allocated 100 owing to their observed large numbers, making a total calculated sample size of 400. From each stratum, the next available respondent who met the criteria and consented was interviewed until the number for that stratum was reached. For teachers, 10 schools (five primary and five secondary) were randomly selected from schools within the city. Only five teachers from each school (next available) were interviewed.

Data Collection
Data Tool
The data tool was in the form of a structured researcher-administered questionnaire. The interview questions were adopted and modified from a similar study carried out in India.[12]

Pilot
A pilot study was conducted in two languages (English and Luo) to check for ease of understanding of the interview questions, and any necessary changes were incorporated.

Research Assistants
The two research assistants were educated up to tertiary level (able to speak English) and were Luo speakers (the local language of the sub-region). They were trained (in a half-day workshop) on the local translations of the questions to be administered to the participants who could not speak English, interactions with respondents, obtaining informed consent, and privacy and confidentiality during the process of conducting interviews.

Data Collection Process
The research assistants identified the respondents, introduced themselves and the research topic, and responded to any questions that arose. If the participant accepted and consented to participate at that particular time, they were engaged by the research assistant directly reading the questions, translating where necessary, and ticking the appropriate responses from the respondents without changing the meaning. Some participants who were busy were rescheduled according to their free and flexible time, and were interviewed later.

Data Collection Period
Data collection was carried out from June to November 2023.

Data Management and Analysis
The raw data collected were compiled and kept in the safe custody of the investigators. The information was entered in Microsoft Excel for Windows and the electronic records were password protected on a work computer, with limited access to data only by the investigators. Only 396 questionnaires had complete data, while six had missing information. Data in the Excel sheet were exported and analysed using Stata version 17, where both descriptive and analytic statistics were obtained and presented in the form of tables.

Ethical Considerations
This study was reviewed and approved by Lacor Hospital Institutional Research and Ethics Committee (LHIREC Admi. 005/04/2022), one of the ethical review committees seconded by Uganda National Council of Science and Technology (UNCST), with study approval number 005/04/2022. There were no foreseeable health risks or discomfort envisaged as a result of participation. The interview processes ensured privacy and confidentiality. Data will be kept confidentially. No identifying data such as names and home addresses were collected. Each study participant gave their informed consent before participation. They were free to decline from participating in the study and to withdraw at any time during the interview process or even afterwards, with no consequences. Participation in this study was voluntary, and no monetary benefits were given to study participants, only words of appreciation to the participant and an explanation of how such studies can benefit them and the whole population at large. This study was conducted in accordance with the Declaration of Helsinki.

Results
Socio-Demographic Characteristics
In total, 396 participants were interviewed. The majority were males (81.6%, n=323), aged 21–30 years (30.6%, n=186), had a secondary level of education (59.3%, n=235), were commercial motorcyclists (Boda-Boda) (23.7%, n=94), and had worked for more than 5 years in their current occupation (45.7%, n=181) (Table 1).

Table 1 Baseline Characteristics of the Participants

Variable	Frequency	Percentage
Sex		
Female	73	18.4
Male	323	81.6
Age (years)		
≤20	13	3.3
21–30	186	47
31–40	121	30.6
41–50	61	15.4
51–60	15	3.8
Educational level		
Primary	44	11.1
Secondary	235	59.3
Tertiary	17	29.6
Occupation		
Commercial motorcyclists (Boda-Boda)	94	23.7
Construction workers	49	12.4
Military personnel	50	12.6
Other occupation	4	1
Police	49	12.4
Street vendor	51	12.9
Commercial driver	51	12.9
Teacher	48	12.1
Duration in the occupation (years)		
<1	51	12.9
1–5	164	41.4
>5	181	45.7

Experience of FA

The majority of the respondents (85.4%, n=338) reported having witnessed acute illness or accidents/trauma, most of whom had witnessed these at least on two occasions (55.3%, 187/338). The most commonly witnessed cases were accidents/bleeding (68.6%, n=232), followed by burn injuries (10.1%, 34/338), and the least common was drowning (1.5%, 5/338). Of those who had witnessed at least one incident of acute illness/trauma, the majority reported having provided some form of FA/assistance to the victims (85.8%, 290/338). The most commonly reported form of assistance/ FA given was calling an ambulance/transportation to the hospital (39.7%, 115), followed by stopping bleeding (24.1%, 70/290) (Table 2).

Formal Training in FA

Over half of the respondents (52.3%, n=207) reported having attended formal training in FA, most of whom reported having received the training more than 2 years ago (57.5%, n=119) (Table 3).

Knowledge of FA

Only 20.5% (81/396) obtained an above-average score (score of ≥70%), while 41.4% of respondents (164/296) obtained average scores (score of 50–69%), and 38.1% (151/396) scored below average (score of <50%) (Figure 1).

Table 2 Experience of First Aid

Variable	Frequency	Percentage
Witnessed acute illness/trauma (n=396)		
No	58	14.6
Yes	338	85.4
Number of witnessed acute illnesses/traumas		
1	151	44.7
2	157	46.4
>2	30	8.9
Type of acute illness/trauma witnessed (n=338)		
Accident/bleeding	232	68.6
Burn	34	10.1
Choking	9	2.7
Convulsion	10	3
Drowning	5	1.5
Heart attack	7	2.1
Nose bleed	27	8
Poisoning	14	4.1
Of those who witnessed, provided first aid? (n=338)		
No	48	14.2
Yes	290	85.8
If yes (n=290), what did you do?		
Arranged ambulance/transport	115	39.7
Called police	25	8.6
Mental support	29	10
Others	43	14.8
Provided cardiopulmonary resuscitation	3	1
Splint fractures	5	1.7
Stopped bleeding	70	24.1

Table 3 Formal Training in First Aid

Variable	Frequency	Percentage
Trained in FA		
No	189	47.7
Yes	207	52.3
If yes, when last trained?		
<2 years	88	42.5
>2 years	119	57.5

Factors Independently Associated with Good Knowledge (Score of ≥50%) Among the Participants

The factors independently associated with a knowledge score rated average and above were having obtained tertiary education (aOR=2.2, 95% CI=1.02–4.87, $p<0.045$) and being confident in providing FA (aOR=2.5, 95% CI=1.42–4.48, $p=0.002$) (Table 4).
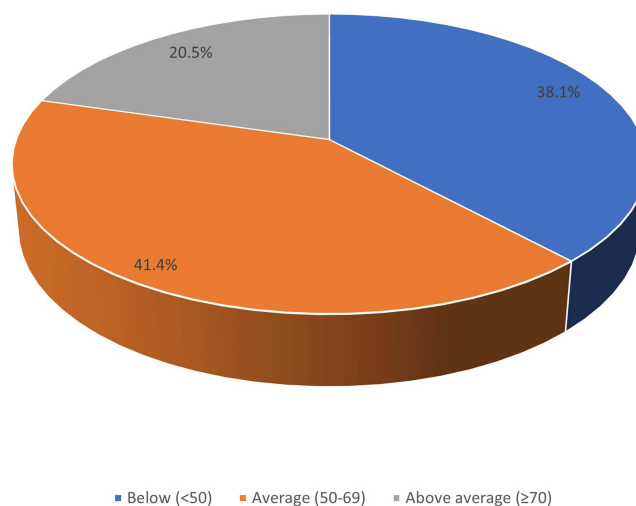
Figure 1 Participants' knowledge scores.

Confidence in Providing FA

The majority of the respondents (67.9%, 269/396) reported being confident in providing FA. Among those expressing no confidence (n=127), the most commonly cited reason was a lack of knowledge and skills (61.4%, 78/127), followed by a fear of taking health risks while providing FA (18.9%, 24/127) and a fear of legal implications (7.1%, 9/127) (Table 5).

Table 4 Factors Independently Associated with an Above-Average Knowledge Score Among the Participants

	Crude Prevalence Ratio (95% Confidence Interval)	P value	Adjusted Prevalence Ratio (95% Confidence Interval)	P value
Educational level				
Primary	Reference		Reference	
Secondary	1.2 (0.52–2.57)	0.725	1.2 (0.53–2.57)	0.705
Tertiary	2.4 (1.08–5.24)	0.031	2.2 (1.02–4.87)	0.045
Confidence in providing FA				
No	Reference		Reference	
Yes	2.7 (1.53–4.83)	0.001	2.5 (1.42–4.48)	0.002

Table 5 Confidence in Providing First Aid

Variable	Frequency	Percentage
Can you confidently provide FA in future?		
No	127	32.1
Yes	269	67.9
If no, why? (n=127)		
Fear of legal implications	9	7.1
Fear of taking health risk	24	18.9
Lack of knowledge and skills	78	61.4
Others	15	11.8
Waste of time	1	0.8

Table 6 Factors Independently Associated with Confidence in Giving First Aid Among the Participants

	Crude Prevalence Ratio (95% Confidence Interval)	P value	Adjusted Prevalence Ratio (95% Confidence Interval)	P value
Trained in FA				
No	Reference		Reference	
Yes	1.4 (1.23–1.65)	<0.001	1.3 (1.11–1.53)	0.001
Ever provided FA				
No	Reference		Reference	
Yes	1.4 (1.07–1.87)	0.015	1.3 (0.99–1.71)	0.063

Factors Independently Associated with Confidence in Giving FA Among the Participants

The factors associated with confidence in giving FA were having been trained in FA (aOR=1.3, 95% CI=1.11–1.53, p=0.001) and having ever given FA before (aOR=1.3, 95% CI=0.99–1.71, p=0.063) (Table 6).

Discussion

This study assessed experience, formal training, confidence, knowledge, and factors associated with knowledge and confidence in providing FA among layperson first-responders of various occupations, in Gulu City, Northern Uganda. The majority of the respondents (85.4%) reported having witnessed acute illness or accidents/trauma in their lifetime, most of whom (55.3%) had witnessed such events at least on two occasions. This is higher than in a survey conducted in Kampala, where only police officers, bus drivers, and local council leaders were assessed, which found that only 39% had witnessed trauma injuries and related deaths in the prior 6 months.[23] The differences in our study are that, first, we assessed the number of cases witnessed in a lifetime, rather than within the last 6 months; secondly, our study also assessed wider background occupations, including military personnel, teachers, construction workers, commercial motorcyclists (Boda-Boda riders), and street vendors, which were not included in Kampala the study; and lastly, the study in Kampala only looked at trauma-related injuries, while our study assessed both medical and trauma-related emergencies. Our study showed that the majority of the emergencies witnessed were accidents/bleeding (68.6%), followed by burn injuries (10.1%). This is similar to the finding in Kampala, where the majority of the trauma-related injuries were accidents, followed by burns. This is not surprising in the context of Northern Uganda, which has a relatively poor road infrastructure that is likely to lead to high rates of road traffic accidents, and hence, the high numbers of respondents who witnessed these trauma emergencies. The majority of our respondents (85.8%) reported having given some form of FA, with the most commonly reported aid given being assisting in transporting the patient (39.7%), similarly to the Kampala study, where 90% provided FA and 76% of the FA given was lifting or transporting the victim to hospital.[23] Although transporting patients to hospital is not a specific FA procedure, this act can save lives, especially when patients may be in urgent need of resuscitation and surgical intervention. In Malawi, an assessment of knowledge and skills among first responders bringing trauma patients to emergency departments found that 75.8% provided FA, and the most common form of aid given was lifting and transporting trauma victims.[24]

Compared with other studies carried out on other continents, our study showed a higher percentage of witnessed emergencies than a similar survey conducted in India, where only 52% had witnessed more than two emergencies in a period of 6 months prior to the survey.[12] This again is because our study included lifetime experience in witnessing these emergencies compared to a period of only 6 months in the survey conducted in India. In general, acute illness and/ or trauma emergencies are common in communities, and most people will witness these emergencies.

Our study showed that 52.3% of respondents reported having attended formal training in FA, most (57.5%) of whom reported having received the training more than 2 years ago. This is in contrast to a study conducted in Kampala among taxi drivers, where only 19.4% reported having received training in FA.[25] The difference here possibly stems from the participants in that study comprising only taxi drivers, compared to our participants with a variety of occupations. Our study involved

professionals such as police, military, teachers, and construction workers, some of whom had undergone formal education with the possibility of having received some kind of formal training in FA, especially the military group (soldiers and police), which may not be the case in the study conducted among taxi drivers in Kampala. Another study, conducted among mountaineering practitioners in East Africa, found that only 47.1% had received training in basic FA.[26] In a crash-prone area of Ashanti region in Ghana, only 43.1% had received training in FA but 40.4% had above-average knowledge, compared to our study, in which 20.5% had an above-average score (≥70%), and 82.9% were willing to provide FA.[27] Studies have shown that training can improve knowledge and skills, and hence confidence in providing FA.[18,22,28–33]

In our study, 61.9% had a good knowledge score (≥50%), with only 20.5% scoring above average (≥70%). This is much higher than in the study conducted among taxi drivers in Kampala, where only 29.9% had a good knowledge score of ≥50%. One possible explanation for this difference is that our study captured diverse professionals, most of whom were educated (teachers, police, military), and who could have received training and have a higher capacity for knowledge retention, as seen in our analysis of the factors associated with good scores, compared to taxi drivers in the study conducted in Kampala, where most did not attain a higher level of education. Our study found that the main factor associated with good knowledge (score of ≥50%) was educational level, with those who had obtained tertiary education being more than twice as likely to have good knowledge than their counterparts with a lower level of education. This finding clearly emphasizes the importance of education and the need to make FA training mandatory in educational institutions, so that future generations are well equipped with this life-saving knowledge and skills. Similarly, those who were confident in providing FA were more than twice with higher score than those who reported having a lack of confidence. It is possible that having knowledge in FA is gives a person confidence in giving FA, instead of vice versa. This finding is also similar to the study among taxi drivers in Kampala, where those who had below post-secondary education were five times less likely to have good knowledge.[25] When exploring the knowledge of burn FA among patients, caregivers, and visitors at Kiruddu National Referral Hospital in Kampala, Uganda, the mean knowledge score was found to be low compared to our study, with the mean score being only 56%, with only 5.6% found to have adequate knowledge.[34] Our study did not find a significant association between prior training in FA and knowledge, but prior training was associated with confidence in providing FA. In Türkiye, an assessment of knowledge of FA among industrial workers found a high level of knowledge, and significant associations between educational level, prior training, and long working hours, and high levels of knowledge.[35]

The majority of the respondents in our study (67.9%) reported being confident in providing FA, which was similar to the finding from a study among taxi drivers in Kampala (69%).[25] Those who had ever been trained in FA and those who had experienced giving FA before were 30% likely to report confidence in giving FA in the future compared to the counterparts in this study. It is a well-known fact that training and experience improves one's confidence in performing any practical tasks. Among those who expressed no confidence, the most commonly cited reasons were lack of knowledge and skills (61.4%), followed by fear of taking health risks when providing FA (18.9%) and fear of legal implications (7.1%). Lack of knowledge and skills has also been found to be a perceived barrier in a large sample-size study of over 1200 households in the Democratic Republic of Congo, where 83.6% did not believe that they had the required basic knowledge and skills in FA.[36] In Tanzania, 135 police officers were assessed on their basic knowledge of post-crash FA, and the study found a low level of knowledge, with a mean score of 44.7%, but this improved to 72.9% after training, which was maintained with high confidence even after 6 months.[31] Our finding also confirms the findings of research carried out in other continents, for example in India, where major barriers to giving FA were a lack of knowledge and skills, "not knowing what to do", and fear of legal implications.[12] The lack of skills and knowledge as a barrier could be tackled by scaling up FA training. Legal implications being cited as one of the main barriers is possibly because, in Uganda, once a good Samaritan has delivered an unknown accident patient to a health facility, he or she is likely to become one of the first witnesses to be recorded by police investigating the scenario, and this is considered intimidating for many who would not like to stand witness in legal proceedings. This finding could be useful to educate and advocate to the judiciary system in Uganda, not only on the need to act with caution when including a good Samaritan as a witness in legal proceedings, but also to create awareness to clear this perception from laypeople in the community.

Strengths and Limitations of the Study

This study involved a sufficient sample size and population with wider occupational backgrounds than any other study conducted in Uganda or other low- and middle-income countries,[37] making it generalizable to other populations in other regions. It is possible that the respondents could have hurried with their responses while being interviewed. This could especially be the case with Boda-Boda riders and street vendors, as the survey may have been taken to be a waste of time for their business. However, those who were too busy were requested to schedule a time during the day when they could give their full attention. Interviewer and interviewee bias could have some impact on the information gathered, since these were subjective responses from respondents, with the exception of knowledge assessment, where if someone did not know the correct answer they could not pretend that they knew. However, these issues were dealt with by training the research assistants on how to accurately conduct interviews and having interview questions structured in such a way as to eliminate such bias.

Conclusions and Recommendations

Although our study involved wider occupational backgrounds of respondents, in general, FA training reported among laypeople in Northern Uganda was higher than in other studies conducted in other regions of Uganda and East Africa. Many layperson first responders did not feel confident in giving FA, because of a lack of knowledge, and the fear of health risks and legal implications, which could be improved by scaling up training. The main factors driving knowledge and confidence in giving FA are higher education at secondary and tertiary levels, training in FA, and prior experience of giving FA. Further assessment in other regions, including respondents from many occupational backgrounds, formal training in FA among laypeople, such as in education, using available FA training guidelines such as the Advanced Manual for first responders (First-Aid-for-First-Responders [FAFR]),[38,39] and providing information to the wider community to allay fears of the legal implications of FA are recommended.

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Disclosure

The authors declare that they have no conflicts of interest in this work.

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