Ebola Epidemic Preventive Practices: Knowledge, Attitude and Practice of Community Members in High-Risk Districts of Uganda

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Abstract

Background: As part of the country's ongoing EVD outbreak preparedness activities in Uganda, our goal was to evaluate community knowledge and attitudes and preventive practices linked to the disease.

Methods: This study employed a community-based cores sectional study among 842 participants. The study was conducted in three districts of Mubende, Kyegegwa and Kassanda in the central region of Uganda. These are high-risk districts in Uganda

Results: Results show that the majority 290(34.4%) of the participants were aged between 28–38 years, 578(68.6%) were female, 482(57.2%) had primary education, 431(51.2) single, 369(44.7) unemployed and 196(23.8) received information from radios. Results indicate that 821(97.5%) of the participants had heard of EVD, and 646(76.7%) reported that EVD is a rare and deadly disease. On the mode of transmission, 562(66.7%) knew that EVD is transmitted through physical contact with an infected person, 498(59.1%) through blood and 606(72.0%) through normal social contact. Overall, 525 respondents were classified as having good knowledge of the Ebola virus disease, accounting for 62.4% of the total, whereas 470(55.8%) had a favorable attitude toward the management and prevention of the Ebola virus disease. A greater understanding of the Ebola virus disease was found among participants with increased age and education beyond the first grade compared to those with no formal education. Casual labourers were 3 times more likely to have good practices compared to agriculturalists. Participants who received information from others sources were less likely to have good practices compared to those who received it from the radio.

Conclusion: Communities in Uganda impacted by filovirus outbreaks have a reasonable level of knowledge and a favourable attitude toward methods to prevent and control the Ebola disease. Public health officials should do more by providing instructional materials for future epidemic preparedness utilizing appropriate communication channels, especially, including local radios as reported by the communities.

Keywords: Attitude • Ebola virus • Infection • Knowledge • Prevention

Introduction

The Ebola Virus Disease (EVD), formerly known as Ebola haemorrhagic fever, is a highly serious and frequently fatal disease condition that affects people [1]. Four of the six ebolavirus species that are currently recognized can infect people [2]. The case fatality ratio (CFR) for EVD remains high, reaching more than 60% for Zaire ebolavirus in 2018–2020, despite significant improvements in clinical care [2]. Significant resources are needed for coordination, surveillance, laboratory work, case management, infection prevention and control, vaccination, risk communication, and community engagement (RCCE) as part of the public health response to manage EVD epidemics [2].

Fruit bats, the natural host and members of the Pteropodidae family, serve as the first point of transmission to humans, although most transmission during outbreaks is from person to person [3]. Through direct mucosal and skin contact with blood and other bodily fluids or secretions such as urine, stool, semen, vaginal secretions, tears, saliva, etc. of those who are infected with or have died from the disease, the disease affects both humans and some non-human primates such as monkeys, chimpanzees, and gorillas [4]. The signs and symptoms of EVD include fever, severe headache, muscle soreness, weakness, and weariness. They might also include diarrhoea, vomiting, stomach pain, and unexplained haemorrhage [5]. There is a chance of transmission during the incubation period, which lasts from 2 to 21 days [6]. Seven weeks after the illness has been treated, it is still possible to sexually transmit (particularly through sperm) [6]. Healthcare professionals, relatives and friends, mourners, and those who come into direct touch with the corpses of the deceased are at a greater risk of catching the disease and spreading it [6].

Human actions and behaviours can affect how EVD outbreaks develop and are contained [5]. Effective RCCE operations during EVD epidemics require the development and implementation of an understanding of how community dynamics affect behaviours [5]. During the EVD outbreaks in West Africa from 2014 to 2016 (outbreaks 4–7) and the Democratic Republic of the Congo from 2018 to 2020 (outbreaks 4–8, respectively), surveys of the public's knowledge, attitudes, and practices (KAP) were carried out (DRC) [7]. These evaluations served as a guide for the creation and application of evidence-based RCCE techniques and other interventions to stop the outbreaks and limit transmission [8]. KAP research in West Africa helped to advise improvements to caregiving practices and rituals involving contact with deceased bodies that were necessary to control the outbreak [9]. Misconceptions that have impeded attempts at EVD prevention and treatment have also been identified by EVD KAP research [9]. Countries bordering the DRC also carried out numerous

community-based assessments throughout the 2018–2020 outbreak to support context-specific preparedness activities to stop and handle any importation occurrences [10].

Infrequent EVD outbreaks have been reported in East, Central, and West Africa since 1976 [11]. Since 2000, Uganda has seen 6 reported EVD outbreaks that can be linked to 3 different ebolavirus species [11]. The Kasese area in Uganda's South Western region was reported to have an EVD outbreak on June 11, 2019, by the Uganda Ministry of Health (MOH) [12]. Rapid action was taken by the Uganda MOH and response partners to contain this EVD epidemic. Uganda prioritized targeted interventions in 30 areas that were thought to be at high or moderate risk of EVD cases being introduced from Eastern DRC, where the 2018–2020 DRC EVD outbreak was concentrated, as part of its preparation measures [13]. Community-based surveillance, RCCE through community-based and mass media channels, point-of-entry screens, infection control procedures at healthcare facilities, and the creation of holding facilities for suspected EVD patients were some of the interventions [13].

As of October 1, 2022, the Mubende, Kyegegwa, and Kassanda districts had reported a total of 115 confirmed cases including 32 deaths. Health officials in Uganda have determined that the current epidemic is associated with the less contagious and less lethal Sudan strain of the virus. Since 2012, the Sudan strain has not been discovered in the nation before. Members of the community who have a poor understanding of the disease may delay diagnosis and treatment which could hasten the spread of the disease. As part of the country's ongoing EVD outbreak preparedness activities in Uganda, our goal was to evaluate community KAP linked to the disease.

Methods

Study design and setting

We carried out a cross-sectional community-based KAP survey in high EVD risk districts on September 28, 2022. The study was conducted in three districts Mubende, Kyegegwa, and Kassanda. The districts are located in the central region of Uganda, approximately 172 kilometres (107 miles) *via* road separating the main city and capital of Uganda, Kampala. We focused on the communities in these three districts because they were affected by EVD.

Study participants

The target population were community members in high EVD-risk districts. A single population proportion formula (n=[Z/2] 2 p [1-p]/d2) was used to calculate the sample size. We used a p-value of 50%, an error margin of 0.5, a design effect of 2 and a non-response rate of 10%. We arrived at a sample size of 853 participants. We used a multi-stage sampling strategy to include study participants. Three high EVD risk districts of Mubende, Kyegegwa, and Kassanda were purposely selected. Mubende district has 10 sub-counties, Kyegegwa district has 7 sub-counties and Kassanda district has 12 sub-counties. A proportionate sampling technique was used to select sub-counties from each district. Thus, 4, 3 and 2 sub-counties were selected from Kassanda Mubende and Kyegegwa, respectively. To select the households, a simple random sampling technique was used. If a certain house had more than one respondent who is at least 18 years old, a lottery was used to choose one of them. We returned to a particular household a second time if there was no eligible respondent there at the time of data collection.

Study instrument

The survey's questions were modified from those used in EVD KAP evaluations in Guinea and Sierra Leone [14]. The researchers oversaw the survey's adaption and changed some of the items to better reflect the situation in Uganda. Social-demographic information, knowledge of EVD, attitude, and practice were all covered by the survey questionnaire. The knowledge component, which had 15 questions, evaluated candidates' knowledge of the disease's characteristics, origin, symptoms, risk group, testing, transmission, treatment, and precautions/preventions. Each item received a yes or no response. The correct response was marked as 1, and the incorrect response as 0. With a total score range of 0 to 15, a cutoff point was established using

the mean. Respondents were deemed to have good knowledge if their scores were higher than the mean. 11 items in the attitude section of the questionnaire assessed individuals' attitudes toward Ebola treatment, infection control practices, and information. There were 12 items in the practice section about using safety precautions. The responses to each item were yes or no. The overall score for the practice items was determined by adding up the item scores (0–12), using the mean score as a cutoff point. Respondents who scored higher than the mean were considered to be practising good precautions against the Ebola virus. The instrument was pretested in one sub-county that wasn't included in the final study before actual data collection. Based on the results of the pretest, the tool was adjusted for consistency and ambiguity. The tool reliability test was evaluated using Cronbach's alpha, which showed results of 0.79 for knowledge, 0.82 for attitude, and 0.86 for practice.

Procedure

Face-to-face interviews were done in Uganda by trained research assistants with survey experience. The interviews were conducted in the local language and an average interview lasted between 20 and 25 minutes. Before collecting any data, the participants' written consent was acquired informing them of the study's objectives.

Data analysis

Data was analyzed at three levels; descriptive, bivariate and multivariate analysis. In descriptive statistics, frequencies, percentages, and measures of central tendency and dispersion were used to analyze and summarize data. The Chi-Square test was used to test for association between practice and socio-demographics, knowledge and attitudes regarding EVD. Binary logistic regression analysis was employed for the prediction of the independent variables associated with EVD prevention practice. The level of significance was considered at 5% with a p-value < 0.05 and a 95% Confidence Interval.

Results

Social demographic information

Overall, 842 participants accepted to take part in the study, giving a response rate of 98.7%. Results in (Table 1) show that the majority 290(34.4%) of the participants were aged between 28-38 years, 578(68.6%) were female, 482(57.2%) had primary education, 431(51.2) single, 369(44.7) unemployed and 196(23.8) received information from radios. Results in Table 1 also, indicate that 450(53.4%) had good prevention practices with majority 136(65.1%) aged 49 and above, 3 (54.8%) female, 124(93.2%) attained secondary education and above, 24(55.8%) widowed, 21(72.4%) casual laborers, and 28(73.7%) used Newspapers as their source of information about EVD.

Knowledge about Ebola and its mode of transmission

Participants' responses to questions assessing their knowledge of the Ebola virus disease and its mechanisms of transmission are summarized in (Table 1). Results indicate that 821(97.5%) of the participants had heard of EVD, and 646(76.7%) reported that EVD is a rare and deadly disease. On the mode of transmission, 562(66.7%) knew that EVD is transmitted through physical contact with an infected person, 498(59.1%) through blood and 606(72.0%) through normal social contact. As illustrated in (Table 2), communities (561 (66.6%) determined that non-human primates like monkeys and chimpanzees, as well as other fauna like bats, were the sources of the Ebola virus outbreak. However, more than half of the respondents, 462(54.9%) did not know that EVD can be transmitted through the droplet route. Overall, 525(62.4%) of the respondents had good knowledge of EVD.

Attitudes towards Ebola viral diseases

Regarding attitudes in (Table 3), 706(83.8%) of participants were concerned about EVD, 515(61.2%) would welcome back survivors into the community and 446(53.0%) would accept safe burials. However, 327(38.8%) of the participants said would welcome back survivors into the community. (Table 3) indicates that overall, more than half of 470(55.8%) of the participants had a good attitude.

Table 1. Social demographic information.

	Variables	Frequency (%)	Poor n=392 (46.6%)	Good n=450 (53.4%)
Age in years	18-27	151(17.9)	113(74.8)	38(25.2)
	28-38	290(34.4)	129(44.5)	161(55.5)
	39-48	192(22.8)	77(40.1)	115(59.9)
	49 and above	209(24.8)	73(34.9)	136(65.1)
Gender	Male	264 (31.4)	131(49.6)	133(50.4)
	Female	578(68.6)	261(45.2)	317(54.8)
Education	No formal education	227(27.0)	134(59.0)	93(41.0)
	Primary education	482(57.2)	249(51.7)	233(48.3)
	Secondary and above	133(15.8)	9(6.8)	124(93.2)
Marital status	Single	431(51.2)	195(45.2)	236(54.8)
	Married	276(32.8)	133(48.2)	143(51.8)
	Divorced/separated	92(10.9)	45(48.9)	47(51.1)
	Widowed	43(5.1)	19(44.2)	24(55.8)
Occupation	Agriculture	235(27.9)	159(41.8)	221(58.2)
	Sales and services	72(8.6)	110(46.8)	125(53.2)
	Professional job	29(3.4)	43(59.7)	29(40.3)
	Casual labour	126(15.0)	8(27.6)	21(72.4)
	Unemployed	369(44.7)	72(57.1)	54(42.9)
Source of information	Radio	196(23.8)	138(37.4)	231(62.6)
	Television	96(11.6)	95(48.5)	101(51.5)
	Leaders	38(4.6)	58(60.4)	38(39.6)
	Newspapers	103(12.5)	10(26.3)	28(73.7)
	Posters/fliers	23(2.8)	64(62.1)	39(37.9)
	Household visits	196(23.8)	17(73.9)	6(26.1)

Table 2. Knowledge about Ebola and its mode of transmission.

	Variables	Frequency (n)	Frequency (n)	95% CI
Heard about EVD	No	21	2.5	1.6-3.8
	Yes	821	97.5	96.2-98.4
EVD is a rare and deadly disease	No	196	23.3	20.5-26.3
	Yes	646	76.7	73.7-79.5
Know whom to contact for suspected cases of EVD	No	317	37.7	30.1-36.5
	Yes	535	62.3	63.5-69.9
EVD transmits through shaking hands/physical contact	No	280	33.3	37.6-44.2
	Yes	562	66.7	55.8-62.4
EVD is transmitted through direct blood contact	No	344	40.9	25.1-31.2
	Yes	498	59.1	68.8-74.9
EVD is transmitted through normal social contact	No	236	28.0	7.4-11.3
	Yes	606	72.0	88.7-92.6
Asymptomatic EVD cases can transmit infection	No	77	9.1	30.3-36.6
	Yes	765	90.9	63.4-69.7
EVD transmits through eating fruits eaten by bats, monkeys and chimpanzees	No	281	33.4	51.5-58.2
	Yes	561	66.6	41.8-48.5
EVD can be transmitted through the droplet route	No	462	54.9	32.9-39.4
	Yes	380	45.1	60.6-67.1
I know the signs and symptoms of EVD	No	232	27.6	24.6-30.7
	Yes	610	72.4	69.3-75.4
EVD can be transmitted sexually	No	332	39.4	36.2-42.8
	Yes	510	60.6	57.2-63.8
There is a vaccine against EVD	No	321	38.1	34.9-41.5
	Yes	521	61.9	58.5-65.1
Overall knowledge of respondents	Poor	317	37.6	34.4-40.9
	Good	525	62.4	59.0-65.6

Association of socio-demographic characteristics with prevention practice of EVD

(Table 4) shows binary logistic regression analysis using the stepwise

Table 3. Attitudes towards Ebola viral diseases.

	Variables	Frequency (n)	Percentage (%)	Percentage (%)
Am concerned when I think about EVD	No	136	16.2	13.8-18.8
	Yes	706	83.8	81.2-86.2
I would welcome back survivors into the community	No	327	38.8	35.6-42.2
	Yes	515	61.2	57.8-64.4
EVD survivor student does not put the class at risk	No	61	7.2	5.7-9.2
	Yes	781	92.8	90.8-94.3
Would buy fresh vegetables from survivor shopkeeper	No	57	6.8	5.3-8.7
	Yes	785	93.2	91.3-94.7
Accept safe alternatives to traditional burial rituals	No	396	47.0	11.9-16.7
	Yes	446	53.0	83.3-88.1
I would hide the EVD suspected family member	No	396	47.0	43.7-50.4
	Yes	446	53.0	49.6-56.3
think am at risk of infection with EVD	No	361	42.9	39.6-46.2
	Yes	481	57.1	53.8-60.4
Would relate to a survivor of EVD	No	312	37.1	33.9-40.4
	Yes	530	62.9	59.6-66.1
I believe that EVD exists	No	135	16.0	13.7-18.7
	Yes	707	84.0	81.3-86.3
I would keep secrecy if a family member gets EVD	No	241	28.6	25.7-31.8
	Yes	601	71.4	68.2-74.3
The overall attitude of respondents	Poor	372	44.2	40.8-47.5
	Good	470	55.8	52.4-55.1

Table 4. Association of socio-demographic characteristics with prevention practice of EVD.

	Variables	COR	95% CI	P value	AOR	95% CI	Sig
Age category	18-27	Ref	Ref	Ref	Ref	Ref	
	28-38	3.711	2.404-5.731	2.404-5.731	4.394	2.637-7.32	***
	39-48	4.444	2.783-7.086	2.783-7.086	4.105	2.364-7.131	***
	49 & above	5.540	3.481-8.817	3.481-8.817	7.293	4.187-12.703	***
Level of Education	No formal education	Ref	Ref	Ref	Ref	Ref	
	Primary education	1.348	0.980-1.855	0.980-1.855	1.813	1.245-2.642	***
	Secondary and Above	19.852	9.600-41.050	9.600-41.050	34.437	15.734-75.37	***
Source of information	Radio	Ref	Ref	Ref	Ref	Ref	
	Television	0.635	0.447-0.902	0.447-0.902	0.694	0.425-1.133	
	Leaders	0.391	0.247-0.620	0.247-0.620	0.421	0.219-0.807	***
	Newspapers	1.672	0.788-3.549	0.788-3.549	0.208	0.074-0.587	***
	Posters/Flyers	0.364	0.232-0.571	0.232-0.571	0.317	0.149-0.667	***
	Household visits	0.211	0.081-0.548	0.081-0.548	0.142	0.049-0.408	***

method. Significant associations with the prevention practice of EVD were age, level of education, occupation and source of information about EVD. Results in (Table 4) indicate that good practice increased with the increasing age and level of education of the participants. Casual labourers were 3 times more likely to have good practices compared to agriculturalists. Participants who received information from others sources were less likely to have good practices compared to those who received it from the radio.

Discussion

We discovered that 62.4% of EVD-affected communities in Uganda are knowledgeable about EVD disease, and 55.8% of them have a favourable attitude toward its control and prevention. This is a little higher than similar studies, particularly those conducted in West Africa and Uganda [15,16]. This

is partially because Uganda has experienced numerous Ebola outbreaks, which have continuously raised community awareness of the disease, changing attitudes and increasing understanding. Also, the president's campaign against the epidemic through the state address may have raised community awareness of the disease. However, more sensitization is required if future outbreaks are to be contained in the shortest amount of time possible as the percentage of people classified as not knowledgeable about EVD is still high at 37.6%. This becomes more important as more than half (54.9%) of the community members did not know that EVD can be transmitted through the droplet route. Uganda's Ministry of Health and other partners should sensitize the communities about the many mechanisms of transmission, clinical signs and symptoms, and control and prevention strategies. The results show that there is still a sizable portion, 44.2% that has unfavourable attitudes toward control and preventive measures. This result mirrors the findings of the study conducted in Uganda in 2017 [15]. Given that Uganda has seen numerous EVD outbreaks as well as other infectious diseases such as COVID-19, these results should not be overinterpreted because we anticipated a higher level of positive attitude.

The findings demonstrate that there is a dread of the EVD disease, which could harm survivors. The stigma associated is a problem, as evidenced by the fact that 38.8%) of respondents said they would avoid interacting with a survivor for fear of getting the disease. This was also reported in the 2017 EVD outbreak in Uganda, where communities had their initial misgivings about the sickness and survivors of the Ebola virus [15]. According to this study, it is still difficult for communities to fully accept that people can recover entirely from the Ebola virus and that they can readily mingle with the rest of the community.

There were differences in the prevention practice of EVD across various sociodemographic and other research variables. The most important predictors of prevention practice of EVD were age and having education beyond the primary level. . Our results indicate that good practice increased with increasing age and level of education of the participants. This is true since education has been shown to affect people's understanding of EVD in Nigeria [17] as it is a crucial factor of knowledge, especially when it comes to health and health-seeking behaviours. In an earlier study in Uganda, after adjusting for other factors including sex and age, education remained significant [15].

Our results showed that Radio was the most widely used medium for disseminating information about Ebola. In line with our studies, the KAP survey in Sierra Leon [18], Radio was the most popular information channel, and stakeholders exploited this fact to advocate that radio be used to the fullest extent possible to transmit important messages to the nation's mass audiences in the local languages. The study area had extensive radio signal collection, which explains why radio was an important source of information. Our results are in agreement with the findings in Cameroon [19].

Conclusion

In conclusion, the study revealed that communities in Uganda that had been affected by filovirus outbreaks are slightly knowledgeable and have a good attitude towards the control and prevention of EVD. Formal education is a significant predictor of knowledge and attitude towards filoviruses. Communities could identify the suspect cases and be aware of the modes of transmission, and they suggest sensitization as the best approach for the control of filovirus outbreaks. Although Uganda's health sector has developed preparedness plans to respond to filovirus outbreaks, the level of knowledge about filoviruses is still below average and needs to be improved. The public health sector could enhance communities' knowledge and attitude by supplying more educational materials and conducting health education for epidemic preparedness and using appropriate communication channels as proposed by the communities.

Our study has its limitation: These findings from our study might not apply to all of the communities in Uganda. Study communities were chosen purposively based on Ebola epidemiological trends in the study design. Communities that have faced outbreaks are more likely to benefit from social mobilizations that take place during outbreaks, and as a result, they appear to be more knowledgeable and careful than other communities that have not

experienced outbreaks. Another limitation is that self-reported behaviour might not necessarily correspond to actual behaviour. Participants may have given responses that were socially acceptable given the high level of awareness of Ebola at the time. The binary variables utilized in the investigation might not have captured the latent processes influencing the respondents' practices. However, future assessments of the population-level impact and reach of strategies for EVD prevention in Uganda might use our findings as a starting point. Also, we have generalizable data for each of the three districts to guide future-focused EVD preparedness at the district level.

Competing Interests

No competing interests.

Patients and Public Involvement

No patients or members of the public were involved in this present study.

Patient Consent for Publication

Not required.

Ethical Approval

Before beginning the study, Lira University Research Ethical Review Board approval was received (LUREC-2022). To take part in this study, participants provided their written, signed consent.

References

1. Etienne, Nadia Laverne, Candace Burns and Helen Acree Conlon. "Ebola virus disease." *Workplace Health Saf* 63 (2015): 551-553.

2. Musaazi, Joseph, Apophia Namageyo-Funa, Victoria M. Carter and Tabley Bakyaita, et al. "Evaluation of community perceptions and prevention practices related to Ebola virus as part of outbreak preparedness in Uganda, 2020." *Glob health Sci Pract* 10 (2022).

3. Baseler, Laura, Daniel S. Chertow, Karl M. Johnson and David M. Morens, et al. "The pathogenesis of Ebola virus disease." *Annu Rev Pathol Mech Dis* 12 (2017): 387-418.

4. Shears, Paul and T. J. D. O'Dempsey. "Ebola virus disease in Africa: Epidemiology and nosocomial transmission." *J Hosp Infect* 90 (2015): 1-9.

5. Suleiman, Ali SM. "Knowledge, attitude and practices concerning Ebola Viral Disease (EVD) among KIU senior medical students on placement at Fort Portal Regional Referral Hospital." (2019).

6. Rewar, Suresh and Dashrath Mirdha. "Transmission of Ebola virus disease: An overview." *Ann Glob Health* 80 (2014): 444-451.

7. Vinck, Patrick, Phuong N. Pham, Kenedy K. Bindu and Eric J. Nilles, et al. "Institutional trust and misinformation in the response to the 2018–19 Ebola outbreak in North Kivu, DR Congo: A population-based survey." *Lancet Infec Dis* 19 (2019): 529-536.

8. Bedrosian, Sara R. "Lessons of risk communication and health promotion—West Africa and United States." *MMWR Suppl* 65 (2016).

9. Tiffany, Amanda, Benjamin D. Dalziel, Hilary Kagume Njenge and Amanda McClelland, et al. "Estimating the number of secondary Ebola cases resulting from an unsafe burial and risk factors for transmission during the West Africa Ebola epidemic." *PLOS Negl Trop Dis* 11 (2017): e0005491.

10. Kakaire, Charles and Ida-Marie Ameda. "Complexity and context of Ebola virus disease preparedness and response in Eastern and Southern Africa." In Communication and Community Engagement in Disease Outbreaks: Dealing with Rights, Culture, Complexity and Context, pp. 93-109. Cham: Springer International Publishing, 2022.

11. Murray, Michael J. "Ebola virus disease: A review of its past and present." *Anesth Analg* 121 (2015): 798-809.

12. Nyakarahuka, Luke, Trevor R. Shoemaker, Stephen Balinandi and Jackson Kyondo et al. "Marburg virus disease outbreak in Kween District Uganda, 2017: Epidemiological and laboratory findings." *PLOS Negl Trop Dis* 13 (2019): 0007257.

13. Aceng, Jane Ruth, Alex R. Ario, Allan N. Muruta and Andrew N. Bakainaga, et al. "Uganda's experience in Ebola virus disease outbreak preparedness, 2018–2019." *Glob Health* 16 (2020): 1-12.

14. Jalloh, Mohamed F., Rebecca Bunnell, Susan Robinson and Paul Sengeh, et al. "Assessments of Ebola knowledge, attitudes and practices in forécariah, Guinea and Kambia, Sierra Leone, July–August 2015." *Philos Trans R Soc Lond B Biol Sci* 372 (2017): 20160304.

15. Nyakarahuka, Luke, Eystein Skjerve, Daisy Nabadda and Clovice Kankya, et al. "Knowledge and attitude towards Ebola and Marburg virus diseases in Uganda using quantitative and participatory epidemiology techniques." *PLOS Negl Trop Dis* 11 (2017): 0005907.

16. Iliyasu, Garba, Dimie Ogoina, Akan A. Out and Farouq M. Dayyab, et al. "A multi-site knowledge attitude and practice survey of Ebola virus disease in Nigeria." *PloS one* 10 (2015): 0135955.

17. Davtyan, Mariam, Brandon Brown and Morenike Oluwatoyin Folayan. "Addressing Ebola-related stigma: Lessons learned from HIV/AIDS." *Glob Health Action* 7 (2014): 26058.

18. Lee-Kwan, Seung Hee, Nickolas DeLuca, Monica Adams and Tina Davies, et al. "Support services for survivors of Ebola virus disease—Sierra Leone, 2014." *Morb Mortal Wkly Rep* 63 (2014): 1205.

19. Wirsiy, Frankline Sevidzem, Denis Ebot Ako-Arrey, Claude Ngwayu Nkfusai and Luchuo Engelbert Bain, et al. "Marburg virus disease outbreak in Guinea: A SPIN framework of its transmission and control measures for an exemplary response pattern in West Africa." *Pan Afr Med J* 40 (2021).

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