

Communication Interventions in Ebola Prevention and Management in Nigeria

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Abstract: The year 2014 witnessed an outbreak of a deadly disease known as Ebola viral disease. Nigeria was one of the countries affected by the deadly disease. This study examined communication interventions using the mass media in preventing the spread of the ebola viral disease in Nigeria. Data were collected using the instrument of questionnaire, personal observation and oral interview. Findings show that interpersonal communication, opinion leaders' influence and mass media messages played complementary role in awareness creation and public enlightenment on modalities for the prevention and management of the dreadful disease. The study recommends continuous reminder and education of the public about the disease to forestall future reoccurrence. In doing so, newer media of communication including social media platforms such as Facebook, Twitter, Youtube, Instagram, etc, should be adopted to complement both interpersonal communication, opinion leaders' voices in both urban and rural areas and the conventional mass media systems. It is also important that greater attention is paid to the use of indigenous languages in the dissemination of the messages using the various available channels.

Key words: Ebola Hemorrhagic Disease (EHF) • Media Interventions • Prevention • Management • Nigeria

INTRODUCTION

Ebola viral disease (EVD), Ebola Hemorrhagic Disease (EHD) or simply Ebola is a disease of humans and other mammals caused by an Ebola virus. Symptoms start two days to three weeks after contracting the virus, with a fever, sore throat, muscle pain and headaches. Typically, vomiting, diarrhoea and rash follow, along with decreased function of the liver and kidneys. Around this time, affected people may begin to bleed both within the body and externally. There are five species of Ebola virus. These species are: Bundibugyo Ebola virus (BDBV), Zaire Ebola virus (EBOV), Reston Ebola virus, (RESTV), Sudan Ebola virus (SUDV) and Tai Forest Ebola virus. (TAFV). RESTV has so far caused Ebola Virus Disease only among nonhuman primates (i.e. chimpanzees, gorillas) and pigs. The rest are known to have caused diseases in human beings. In fact, BDBV, EBOV and SUDV are the culprits behind large Ebola outbreaks.

Ebola was first detected in 1976 during simultaneous outbreaks that occurred in Nzara, Sudan [now part of South Sudan] caused by SUDV and Yambuku in Zaire [now Democratic Republic of Congo] caused by Zaire Ebola virus. The Zaire virus received its name from the

Ebola River found in the Democratic Republic of Congo. The disease typically occurs in outbreaks in tropical regions of sub-Saharan Africa. The largest outbreak is the 2014 West African Ebola outbreak, which affected Guinea, Sierra Leone, Liberia and Nigeria[1].

The first case in Nigeria was a Liberian-American, Patrick Sawyer, who flew from Liberia to Nigeria's commercial capital Lagos on 20th July. Sawyer became violently ill upon arriving at the airport and died five days later [25th July]. In response, the Nigerian government observed all of Sawyer's contacts for signs of infection and increased surveillance at all entry points to the country. As part of the containment efforts, 353 possible contacts were monitored in Lagos and 451 in Port Harcourt. A close contact of Sawyer was treated in a Port Harcourt hotel, by a male physician who developed symptoms of weakness and fever on 11 August and died of Ebola on 22 August. His infection was confirmed on 27 August by the virology laboratory at Lagos University Teaching Hospital. As of 22 September, the WHO reported a total of 20 cases in Nigeria with 8 deaths which includes the first Nigerian casualties, the nurses that attended to the Liberian and the doctor who treated Sawyer, Ameyo Adadevoh. Adadevoh was

posthumously praised for preventing the index case (Sawyer) from leaving the hospital at the time of diagnosis, thereby playing a key role in curbing the spread of the virus in Nigeria[2].

Other than increased surveillance at the country's borders, the Nigerian government states that they have also made attempts to control the spread of disease through aversion of misinformation with accurate mass media campaign which involves electronic and mass media. The World Health Organisation stated that Nigeria had not reported any new cases since 8 September 2014 and was subsequently declared Ebola-free on 20th October same year. This study examined communication interventions through the mass media in the elimination of the disease in the country. A study on this subject is important because a search on existing literature on communication and mass media intervention in the eradication of the viral disease reveals gross paucity of such. The available ones are scanty and undocumented. Filling this intellectual knowledge gap is the problem that prompted this study [3].

Objectives of the Study: The study sought to achieve these objectives:

- To determine the role the mass media played in the prevention and management of Ebola Hemorrhagic Disease in Nigeria.
- To identify the major media channels through which audience accessed the messages on ebola prevention and management in the country during the time.
- To ascertain more effective campaign strategies in disseminating messages on Ebola prevention and management in Nigeria.

Research Questions:

- What role did the mass media play in prevention and management of Ebola Hemorrhagic Disease in Nigeria?
- What were the major media channels through which audience accessed messages on Ebola prevention and management in the country?
- Are there more effective campaign strategies for disseminating messages on Ebola prevention and management in Nigeria?

The Ebola Hemorrhagic Disease: Ebola Hemorrhagic Fever (EHF) or simply Ebola is a disease of humans and other mammals caused by Ebola virus. The virus contains linear non segmented, single-stranded, *RNA genomes*. It is one of the viral hemorrhagic diseases such as Ebola

Fever and Marburg Disease. Fruit bats are the most common hosts of the virus. Other animals commonly infected with the virus are nonhuman primates, monkeys, forest antelopes and porcupines. Large Ebola outbreaks occur often in West and Central Africa due to the common practice of hunting and eating meat from wild animals often infected with the virus. People can also be indirectly infected via exposure to objects or areas that have been contaminated with the bodily fluids of the infected, like used syringe needles or improperly sterilized medical instruments used during an outbreak.

According to the World Health Organisation, there have been cases where men who have recovered from the disease can still transmit the virus through their semen within seven weeks of recovery. The Signs and symptoms of Ebola virus disease (EVD) usually begin suddenly with an influenza-like stage characterized by fatigue, fever, headaches and pain in the joints, muscles and abdomen. Vomiting, diarrhoea and loss of appetite are also common. Less common symptoms include the following: sore throat, chest pain, hiccups, shortness of breath and trouble swallowing. The bleeding phase typically begins five to seven days after first symptoms. Internal and subcutaneous bleeding may present itself in the form of reddened eyes and bloody vomit. Bleeding into the skin may create hematomas (especially around needle injection sites). Sufferers may cough up blood, vomit it, or excrete it in their stool. The average time between contracting the infection and the start of symptoms (incubation period) is 2-21 days. In about 5-50% of cases, skin manifestations may occur. Early symptoms of EVD may be similar to those of malaria, dengue fever, or other tropical fevers, before the disease progresses to the bleeding phase. The diagnosis is confirmed by isolating the virus, detecting its RNA or proteins, or detecting antibodies against the virus in a person's blood. Isolating the virus by cell culture, detecting the viral RNA by polymerase chain reaction (PCR) and detecting proteins by enzyme-linked immunosorbent assay (ELISA) works best early and in those who have died from the disease. Detecting antibodies against the virus works best late in the disease and in those who recover [4].

During an outbreak, virus isolation is often not feasible. The most common diagnostic methods are therefore real-time PCR and ELISA detection of proteins, which can be performed in field or mobile hospitals [5].

One step recommended by the "World Health Organisation" is the education of the general public of the risk factors for Ebola infection and of the protective measures individuals can take. These include avoiding

direct contact with infected people and regular hand washing using soap and water. Bush meat, an important source of protein in the diet of some Africans, should be handled with appropriate protective clothing and thoroughly cooked before consumption. Some research suggests that an outbreak in the wild animals used for consumption, bush meat, may result in a corresponding human outbreak. Since 2003, such outbreaks have been monitored through surveillance of animal populations with the aim of predicting and preventing Ebola outbreaks in humans. Older burial rituals, which might have included making any kind of direct contact with a corpse, require reformulation such that they consistently maintain a proper protective barrier between the corpse and the living. Social anthropologists may help find alternatives to traditional rules for burials. Airline crews are instructed to follow a certain isolation procedure should anyone exhibit symptoms resembling the Ebola virus disease [6].

Ebola viruses can be eliminated with heat (heating for 30 to 60 minutes at 60°C or boiling for 5 minutes). On

surfaces, some lipid solvents such as some alcohol-based products, detergents, sodium hypochlorite (bleach) or calcium hypochlorite (bleaching powder) and other suitable disinfectants at appropriate concentrations can be used as disinfectants. No Ebola virus-specific treatment is currently approved. Zmapp and Nanosilver are still on trial. However, survival is improved by early supportive care with rehydration and symptomatic treatment. Treatment is primarily supportive in nature. These measures may include management of pain, nausea, fever and anxiety, as well as rehydration via the oral or by intravenous route. Blood products such as packed red blood cells, platelets or fresh frozen plasma may also be used. Other regulators of coagulation have also been tried including heparin in an effort to prevent disseminated intravascular coagulation and clotting factors to decrease bleeding. Anti-malarial medications and antibiotics are often used before the diagnosis is confirmed, though there is no evidence to suggest such treatment is in any way helpful.



Bleeding from the Mouth



Safe transfer and burial methods of dead ebola victims (source: NYSC Ebola awareness handbook, 2015).

Origin of Ebola Hemorrhagic Disease: It is not entirely clear how the disease started. The initial infection was believed to have occurred after an Ebola virus was transmitted to human by contact with an infected animal's body fluids. The first known outbreak of Ebola virus disease (EVD), was identified 1976 in Nzara, Sudan [now South Sudan]. The Sudan outbreak due to Sudan specie infected 284 people and killed 151. The first case in Sudan occurred on 27 June in a storekeeper in a cotton factory in Nzara, he was hospitalized on 30 June and died on 6 July.

On 26 August 1976, a second outbreak of EVD caused by Ebola virus (Zaire Ebola Virus) began in Yambuku, in the Democratic Republic of the Congo (then known as Zaire). The first person infected with the disease was village school headmaster Mabalo Lokela, who had toured an area near the Central African Republic border along the Ebola River between 12–22 August. On 8 September he died of what would become known as the Ebola virus. Another major outbreak occurred in 1995 in the Democratic Republic of Congo, affecting 315 and killing 254. The next major outbreak occurred in Uganda in 2000, affecting 425 and killing 224. In 2003 there was an outbreak in the Republic of Congo that affected 143 and killed 128.

In August 2007, 103 people were infected by a suspected hemorrhagic fever outbreak in the Democratic Republic of the Congo. The outbreak started after the funerals of two village chiefs and 217 people in four villages fell ill. The 2007 outbreak eventually affected 264 individuals and resulted in the deaths of 187.

On 30 November 2007, the Uganda Ministry of Health confirmed an outbreak of Ebola in the Bundibugyo District in Western Uganda. That was the origin of the new species of *Ebola virus*, called Bundibugyo. The WHO reported 149 cases of this new strain and 37 of those led to deaths.

The WHO confirmed two small outbreaks in Uganda in 2012. The first outbreak affected 7 people and resulted in the death of 4 and the second affected 24, resulting in the death of 17. The Sudan variant was responsible for both outbreaks.

On 17 August 2012, the Ministry of Health of the Democratic Republic of the Congo reported an outbreak of the Ebola-Bundibugyo variant in the eastern region. The WHO revealed that the virus sickened 57 people and claimed 29 lives. The probable cause of the outbreak tainted bush meat.

Outbreak of Ebola Hemorrhagic Disease: West Africa and Nigeria: A 2-year-old boy called Emile who died on 28 December 2013 in the village of Meliandou, Guinea was the index case of the current Ebola virus disease epidemic. His mother, sister and grandmother then became ill with similar symptoms and also died. People infected by those victims spread the disease to other cities/countries. The presumed animal source of the outbreak is yet to be ascertained.

In 25th March 2014, the World Health Organization reported a major Ebola outbreak in Guinea, a western African nation. In Liberia, the disease was reported in Lofa and Nimba counties in late March.

The first person reported infected in the spread to Sierra Leone was a tribal healer; she had treated infected people and died on 26 May. The first case in Nigeria was a Liberian-American, Patrick Sawyer, who flew from Liberia to Nigeria's commercial capital Lagos on 20th July. Sawyer became violently ill upon arriving at the airport and died five days later. In response, the Nigerian government observed all of Sawyer's contacts for signs of infection and increased surveillance at all entry points to the country. As part of the containment efforts, 353 possible contacts were monitored in Lagos and 451 in Port Harcourt. A close contact of Sawyer was treated in a Port Harcourt hotel, by a male physician who developed

symptoms of weakness and fever on 11 August and died of Ebola on 22 August. His infection was confirmed on 27 August by the virology laboratory at Lagos University Teaching Hospital. As of 22 September, the WHO reported a total of 20 cases in Nigeria with 8 deaths which includes the first Nigerian casualties, the nurses that attended to the Liberian and the doctor who treated Sawyer, Ameyo Adadevoh. Adadevoh was posthumously praised for preventing the index case (Sawyer) from leaving the hospital at the time of diagnosis, thereby playing a key role in curbing the spread of the virus in Nigeria [7].

Evidence strongly implicates bats as the reservoir hosts for Ebola viruses. Bats drop partially eaten fruits and pulp, then land mammals such as gorillas and duikers feed on these fallen fruits. This chain of events forms a possible indirect means of transmission from the natural host to animal populations. It was on account of this that the WHO advises facilities that work with animals like farms or zoos to have routine and thorough cleaning and disinfection. If outbreaks occur, then the area must be placed in quarantine and infected animals must be isolated and/or culled under the supervision of health authorities.

Fighting Ebola Hemorrhagic Disease: Fighting the Media Way: Mass media can be seen as an effective tool in information dissemination, hence its indispensability in the fight against the Ebola Hemorrhagic Disease. The various ways are:

- News Media stories: Media stories can deliver accurate and adequate information on the disease called “Ebola Virus” in an in-depth form rather than the common brief disease Prevention message. Media stories may include the following strategies: newspapers, magazines, press conference, press release, video news release, modular television, radio programs, talk shows as well as internet forum.
- Popular Entertainment: Popular entertainment in this regard include; television shows, movies, popular songs are all effective in educating and enlightening the audience about the prevention of Ebola virus in Ebonyi State, since an effective way in which the audience understand and learn new habits and behaviour is by viewing either on the screen or on stage and adapting them to their own situation. Nonetheless, entertainment media not only attract attention, but also reinforce existing behaviour and demonstrate new behaviour, they also tap into the

audience’s emotions. When the audience responds emotionally, the educational message is more likely to influence their behaviour than when they respond only rationally.

- Interpersonal Communication: Groups or individual citizen (family, members, friends, co-workers and health care providers) can affect behaviour change and stimulate community involvement through interpersonal communication (one-on-one counselling, telephone calls, interviews, community forums, training, theatre Webster etc).
- Media Advocacy: A relatively news communication approach, media advocacy, promotes change in public health policy rather than in public debate and increases support for effective policies.

Agenda-Setting Theory: This theory according to Anaeto, Onabanjo and Osifeso (2008) was propounded by Maxwell McCombs and Donald L. Shaw in the early 1970s. But Mcdogal (1976)[8] argues that Benard Cohen was the man who initiated the idea and that Maxwell McCombs and Donald L. Shaw were only responsible for empirically confirming the theory. Meanwhile, Menkayi (1996)[9] believe that the notion for agenda setting by the media can be traced back to the works of Mcquail (1987)[10], who suggested that the media are responsible for the “pictures in our heads” and that “the media may not always be successful in telling people what to think, but are stunningly successful in telling them what to think about”. McQuail (1987)[10] reinforces this notion by observing that “the mass media force attention to certain issues, suggesting what individuals should think about, know about and have feelings about”.

This theory assumes that the more attention the media give to a topic, the greater the importance attributed to it by the media audience. This implies that if the media give much air-time or space (in a repetitive manner) to an issue or event, it is seen by information consumers as very important Nwali [11]. Nwanne [12], cited in Osuala [13] explain the theory in these words:

... the media have a great part in determining what most people will be talking about, what most people will think the facts are and what people will regard as the way problems would be solved.

Applied to this study, the agenda setting theory better explains that mass media was instrumental in providing needed information for the Ebola prevention and management in Nigeria during the outbreak.

Research Methodology: The study adopted survey research method. Focus was on Lagos state. The choice of Lagos was because it is the commercial capital of Nigeria and as such, it home to every Nigerian. Again, the disease first broke out in Lagos state and the Federal government made frantic efforts to curtail it within Lagos state.

The population of Lagos state according to the 2006 Housing and population Census exercise was 9, 013, 534. This population is expected to has arisen to 12, 212, 110 using 3.0% annual growth rate.

The sample size was determined using the Sonaldson [14] formula as follows:

$$n = \frac{N}{1 + N (e)^2}$$

where

n = desired sample

N = Total Population of study

1 = constant as 1

e = Accepted error margin

$$\text{Therefore, } n = \frac{12, 212, 110}{1 + 12, 212, 110 (0.05)^2}$$

$$n = \frac{12,212,110}{30,531.275}$$

$$n = 399.99 \text{ approximately} = 400$$

Multi stage sampling was adopted. Purposive technique was first employed to select three local governments (Ikeja, Mushin and Surulere) [15].

Data Presentation: Question: 1 to 5 of the questionnaire was asked to elicit responses about the respondent's demographic data-sex, marital status, educational qualification and occupation.

Table 1 above indicates that 52.5% were male while 47.5% were females. This suggests that a greater number of female respondents are believed to be more concerned about the issues under study, they were involved than male respondents who seem not to be much concerned about it except only few of them shown interest.

The above table depict that 53.75% of the respondents fall between the ages of 18-35 while 46.25% were in the range of 36 and above. This implies that a greater percentage of the respondents comprises of youth while the remaining percentage involved the adult respondents.

Table 1: Sex distribution of Respondents

S/N	Variables	Frequency	Percentage
1	Male	210	52.5%
2	Female	190	47.5%
	Total	400	100%

Sources: Field Survey, November, 2014

Table 2: Age Distribution of Respondents

S/N	Variables	Frequency	Percentage
1	18-35	215	53.75%
2	36-above	185	46.25%
	Total	400	100%

Sources: Field Survey, November, 2014

Table 3: Educational Qualification of Respondents

S/N	Variables	Frequency	Percentage
1	Ph.D	102	27.6%
2	BA/B.Sc	86	23.3%
3	SSCE	101	27.4%
4	FSLC	80	21.7%
	Total	400	100%

Sources: Field Survey, November, 2014

Table 4: Occupation of Respondents

S/N	Variables	Frequency	Percentage
1	Students	180	45%
2	Civil servants	150	37.5%
3	Traders	44	11%
4	Others	26	6.5%
	Total	400	100%

Sources: Field Survey, November, 2014

This table depicts that 102 respondents representing 27.6% have attain PhD level, 86 respondents representing 23.3% have equally attain BA/B.Sc, while 101 respondents representing 27.7% are SSCE level and finally 80 respondents representing 21.7% are FSLC.

From the occupation of the respondents, the data from the above indicates that 180 respondents representing 45% are students and 150 respondents representing 37% are civil servants. Also, 44 respondents representing 11% are traders while the remaining 11 respondents (6.5%) are engaged in other occupation excluded those ones mentioned earlier (the one stated in the questionnaire).

The above table depicts that 354 respondents representing 88.5% have access to media messages as regard Ebola Virus while 46 respondents representing 11.5% do not.

In line with that analysis, it shows that majority of the respondents have a clear and good knowledge of information on Ebola virus through the aid of the media. This implies that media practitioners are really doing a great job in creating awareness about the disease.

Table 5: Ascertaining whether respondents had access to mass media messages on the Ebola virus

S/N	Variables	Frequency	Percentage
1	Yes	354	88.5%
2	No	46	11.5%
Total			100%

Sources: Field Survey, November, 2014.

Table 6: Respondents' rating of the effectiveness of Ebola messages in the mass media

S/N	Variables	Frequency	Percentage
1	Very effective	270	67.5%
2	effective	105	26.25%
3	Ineffective	25	6.25%
Total		400	100%

Sources: Field Survey, November, 2014

Table 7: channels through which audience accessed messages on Ebola prevention and management

S/N	Variables	Frequency	Percentage
1	Interpersonal communication	104	26%
2	Mass media	241	60.25%
3	Opinion leaders	35	8.75%
4	Social media	20	5%
Total		400	100%

Sources: Field Survey, November, 2014

Table 8: Respondents' Language preference in Ebola message dissemination

S/N	Variables	Frequency	Percentage
1	Indigenous	270	67.5%
2	Pidgin	105	26.25%
3	English	25	6.25%
Total		400	100%

Sources: Field Survey, November, 2014

It is noted from the above table that 270 respondents representing 67.5% believed the messages were very effective, 105 respondents representing 26.25% said they were just effective whereas 25 respondents representing 6.25% opined that the messages were poor.

The table above indicates that 26% of the respondents got most of the messages through interpersonal communication. The mass media accounted for 60.25%, opinion leaders constituted 8.75%, while social media were just 5%.

Data on table above shows that 68% of the respondents preferred the messages in their indigenous languages, 26% wanted it in pidgin English, while only 6% preferred the messages in the standard English language.

Findings:

- Communication through various media played significant role in the fight against the spread of

Ebola virus disease in Nigeria through awareness creation, education and sensitization.

- Interpersonal communication and the mass media were the most effective channels through which audience accessed messages on Ebola prevention and management.
- Indigenous languages were the most preferred language by the respondents for the dissemination of the Ebola messages.

Recommendation: The study recommends continuous periodic reminder and reorientation of the public about the disease to forestall possible future breakout. In doing so, newer media of communication including social media platforms such as Facebook, Twitter, Youtube, Instagram, etc, should be integrated to complement both interpersonal communication and opinion leaders' voices in both urban and rural areas, as well as the conventional mass media systems.

It is also important that greater attention is paid to the use of indigenous languages in the dissemination of the messages using the various available channels.

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