

Preventive Health Practices in an Ebola Virus Disease Free Period

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Abstract

The containment of the Ebola virus disease (EVD) in Nigeria can be attributed to quick response by relevant stakeholders and adoption of preventive health behaviours among the general population. In this current study, respondents' preventive health behaviours were examined in a post-Ebola crisis period. A total of three hundred and twenty four (324) respondents were surveyed through a self-developed and validated questionnaire. The questionnaire probed into respondents' preventive health behaviours during the Ebola crisis; present health behaviours now that there is no EVD in Nigeria; and respondents' intended practice of preventive health behaviours should there be another outbreak of EVD. Findings of the study show consistent preventive health behaviours among respondents. The study recommends continuous health education programme to sustain positive health practices.

Keywords: Health Practice, Preventive, Ebola Virus

1. Introduction

The Ebola Virus Disease in Nigeria can be described as a flash in the pan compared to other deadly diseases such as HIV/AIDS, Hepatitis B Virus and Tuberculosis. The disease was imported to Nigeria in July 2014 by Late Patrick Sawyer, a diplomat from Liberia. Heartening enough, by October 20th the same year, Nigeria was declared Ebola-free by World Health organization (WHO, 2014). This Unprecedented seemingly magical achievement has been attributed to rapid response instituted by the Federal Government of Nigeria and Lagos State Government through the establishment of the Ebola Emergency Operation Centre in collaboration with WHO, UNICEF, International Federation of Red Cross and Red Crescent Societies, ActionAid and other developmental agencies. It must be mentioned that the acceptance and adoption of information and education products of the Ebola Emergency Operation Centre complimented the success achieved by the rapid response strategy. During the Ebola crisis, the general public was receptive to health education, practicing precautionary measures like avoiding indiscriminate personal contacts, being careful with what type of meat to eat, and selecting the type of pets to keep. Hand-washing was almost like a ritual- with schools and other institutions providing soap and water for students, staff and visitors. Taking body temperature with most fascinating equipment – infra-red thermometer was also in vogue, and has now come to stay. The idea of the infra-red thermometer is to avoid physical contact which is critical to EVD control strategy.

Health Education Activities

The Social Mobilization and Communication Unit of the Emergency Operation Centre was saddled with the responsibility of providing health education to the general public on EVD. This researcher served as a volunteer consultant on the campaign team. As a starting point, the unit identifies some key messages on which the health education strategy should operate. This include; hand washing, avoiding indiscriminate contacts, not handling/touching dead bodies, reporting cases, going to hospital when sick and not eating bush meat. The bush meat angle was later reviewed and dropped for obvious reasons that it was not a threat in Nigeria.

Various communication channels were used to disseminate information on prevention and control of the virus. They include the radio, television, newspapers and the internet. Two other innovative approaches employed are 'Ebola house-to-house campaign' and the 'Ebola-road show'. For the house to house campaign, mapping of local government areas in Lagos was done. Some streets were specifically targeted

with every other house on each of the streets marked for the intervention. The public address system was used by a team of health educators in communicating the key messages of the campaign. They entertained questions from the audience and there was also hand washing demonstration and re-demonstration. The Ebola road show on the other hand employed the entertainment- education strategy. Floats with artists in branded T- shirts danced to music as the floats go along on the road. At specific strategic places, the floats stopped and the artists distributed handbills posters and other IEC materials. Hand washing demonstrations were also done. Attached to each float was a medical doctor who attended to audience questions and concerns regarding EVD. These two initiatives have the advantage of interacting with the recipients of the education programme ‘face to face’. The Ebola house-to-house campaign was designed to meet the public at homes or work places. The road-show on the other hand targeted people who by the nature of their jobs or daily activities may be on the road or around the neighborhood. These two approaches provided ample opportunity for demonstration and re-demonstration of hand washing which is a key theme of the intervention.

Now that Nigeria is declared EVD free (WHO, 2014), it will be desirable to find out if the general public still engage in those preventive health behaviors deemed necessary during the Ebola crisis. Specifically are residents in Lagos metropolis ‘crisis-time’ health behavior adaptors? This is the question this current study sets out to address.

Objectives of the Study

The following objectives are the premise upon which the study operates:

1. Assessing the preventive health practices of the sample during the EVD crisis in Nigeria.
2. Ascertaining the current preventive health behaviors of respondents against EVD.
3. Probing into possible projected preventive behaviors of respondents should there be another incidence of EVD in Nigeria in the future.

Hypotheses

1. Lagos residents will not have significant knowledge on the Ebola Virus Disease
2. Lagos residents will not have significant positive preventive health behavior in the post-Ebola Virus Disease outbreak.
3. There will be no significant difference between preventive health behavior during EVD outbreak and likely preventive health behavior in future occurrence among Lagos residents.

2. Methodology

Research Method

The descriptive survey research was adopted for this study. The large sample size involved in the study favours the use of this research method.

Population

The population for this study comprise of residents in Lagos-Central Senatorial district of Lagos State. The Lagos-central senatorial district comprise of thirteen local government areas (LGAs) and local council development areas (LCDAs)

Instrument

A self-developed questionnaire was the only instrument used for this study. The first part of the questionnaire named Ebola Preventive Behavior Questionnaire (EPBQ), consisted of demographic section aimed at collecting specific personal details on the respondents. These include sex, age and religion. The other session focused on the knowledge of the respondents on Ebola, respondents’ preventive health behavior during EVD crisis, their preventive health behavior in post-EVD period and likely preventive health behavior in future EVD outbreak.

Sample and Sampling Technique

The sample for the study comprised of 324 male and female residents purposively selected in Lagos Central Senatorial District. They include both young and old people residing in the senatorial district as at the time of the study.

Validity and Reliability

Content validity was used to ascertain the ability of EPBQ to measure the variables in the study while the Test-Retest method of reliability was used to measure the consistency of the instrument. The r-value was 0.81 using Cronbach's Alpha.

Procedure for Data Collection and Ethical Consideration

Six research assistants were taken through the questionnaire to familiarize them with the content. They subsequently administered the questionnaire to the respondents in different areas under the Lagos-Central Senatorial District. For those respondents who were unable to read and write, the structured interview approach was used to collect data. Three hundred and fifty (350) copies of the questionnaire were distributed to the respondents through the six research assistants. Three hundred and twenty four (324) copies were returned filled and valid, giving 92.6% response rate.

Table 1: Demographic distribution of Respondents

Variable	Response	Frequency	Percentage
Sex of Respondents	Female	184	61.50%
	Male	115	38.50%
	Total	299	100%
Age range of Respondents	20yrs and below	59	21.60%
	21-30yrs	113	42.40%
	31-40yrs	58	21.25%
	41-50yrs	41	15.02%
	50yrs and above	2	0.73%
	Total	273	100%
Religion of Respondents	Christianity	185	61.10%
	Islam	114	37.60%
	Traditional	4	1.30%
	Total	303	100%

Table 1 above shows the demographic characteristics of the respondents in the study. Majority of the respondents were female constituting 61.5% of the respondents. 115 (38.5%) were male. Regarding respondents' age, majority of the respondents were between the ages of 21-30 years constituting 42.4% of the respondents. 59 (21.6%) were age 21 years and below, 58 (21.25%) were between the ages of 31-40 years, 41 (15.02%) were between the ages of 41- 50 years while 2 (0.73%) were 50 years and above. In terms of religion, majority (185) of the respondents practice Christianity constituting 61.1% of the respondents, 114 (37.6%) practice Islam while 4 (1.30%) practice traditional religion.

Table 2: Respondents' awareness of Ebola Virus Disease

Variables	Responses	Frequency	Percentage
Respondents' awareness of EVD	Yes	304	98.7%
	No	-	-
	Total	304	100%

Table 2 above shows respondents' awareness of EVD. 304 representing 98.7% of the respondents are aware of the Ebola Virus Disease while 4 (1.3%) of the respondents not respond to the question item.

Table 3: Respondents' knowledge of the Ebola Virus Disease

Variables	Response	Frequency	Percentage
Ebola virus disease is deadly	Yes	261	100.0%
	No		
	Total	261	100%
Ebola virus disease is curable	Yes	170	66.90%
	No	84	33.10%
	Total	254	100%
Ebola virus disease is preventable	Yes	255	96.20%
	No	10	3.80%
	Total	265	100%
Washing hand frequently can prevent EVD	Yes	260	96.60%
	No	9	3.40%
	Total	269	100%
EVD can spread through contact	Yes	268	98.20%
	No	5	1.80%
	Total	273	100%
Eating infected bush meat can spread EVD	Yes	265	96.70%
	No	9	3.30%
	Total	274	100%
Nigeria is now EVD free	Yes	251	98.00%
	No	5	2.00%
	Total	256	100%
EVD can be spread by animals and birds	Yes	179	95.70%
	No	8	4.30%
	Total	187	100%

From Table 3 above, the respondents' knowledge on the nature, causes and prevention of Ebola Virus diseases is very high. Over 90% of the respondents have answered in affirmative to each of the question items except Ebola virus been curable. 33.1% of the respondents believed that EVD is not curable.

Table 4: Respondents' preventive health behaviour during EVD

Variable	Response	Frequency	Percentage	Mean
When there was Ebola disease, I washed my hands with soap and water regularly	Very true	173	53.4%	3.34
	True	104	32.1%	
	Slightly true	32	9.9%	
	Not true	15	4.6%	
	Total	324	100.0%	
During the Ebola Disease outbreak, I always avoid indiscriminate contacts with people	Very true	141	53.4%	3.31
	True	45	19.3%	
	Slightly true	25	10.7%	
	Not true	22	9.4%	
	Total	233	100.0%	
I was careful with the type of meat I ate during the Ebola disease in Nigeria.	Very true	147	58.1%	3.28
	True	51	20.1%	
	Slightly true	34	13.4%	
	Not true	21	8.3%	
	Total	253	100.0%	
I was always going to hospital when I felt sick during the Ebola disease outbreak in Nigeria	Very true	92	37.5%	2.72
	True	50	20.4%	
	Slightly true	46	18.8%	
	Not true	57	23.3%	
	Total	245	100.0%	
I was always avoiding hand shakes	Very true	100	30.9%	2.65
	True	74	22.9%	
	Slightly true	85	26.3%	
	Not true	64	19.8%	
	Total	323	100.0%	
I took my personal hygiene seriously	Very true	158	62.0%	3.35
	True	45	17.6%	
	Slightly true	34	13.3%	
	Not true	18	7.1%	
	Total	255	100.0%	
I used hand sanitizer to disinfect my hands during the Ebola disease in Nigeria	Very true	176	58.5%	3.34
	True	69	22.9%	
	Slightly true	37	12.3%	
	Not true	19	6.3%	
	Total	301	100.0%	

Table 4 above shows respondents' behavior on personal hygiene during the outbreak of the Ebola virus disease. The mean value for each of the question items is above 2.5 indicating that the preventive health behaviour of respondents during EVD outbreak is positive.

Table 5: Respondents' Preventive health behavior during post-EVD outbreak

Variable	Response	Frequency	Percentage	Mean
Avoiding indiscriminate contact with people	Very High	74	27.2%	2.72
	High	82	30.1%	
	Not High	81	29.8%	
	Very Low	35	12.9%	
	Total	272	100.0%	
Not eating bush meat	Very High	114	43.8%	2.86
	High	46	17.7%	
	Not High	50	19.2%	
	Very Low	50	19.2%	
	Total	260	100.0%	
Regular washing of hands with soap and water	Very High	140	48.4%	3.22
	High	89	30.8%	
	Not High	43	14.9%	
	Very Low	17	5.9%	
	Total	289	100.0%	
Not handling dead body	Very High	67	23.7%	2.42
	High	57	20.2%	
	Not High	85	30.1%	
	Very Low	73	25.9%	
	Total	282	100.0%	
Use of hand sanitizer to disinfect my hands	Very High	85	31.0%	2.65
	High	59	21.5%	
	Not High	79	28.8%	
	Very Low	51	18.6%	
	Total	274	100.0%	
Taking Personal hygiene seriously	Very High	118	48.2%	3.22
	High	74	30.2%	
	Not High	41	16.7%	
	Very Low	12	4.9%	
	Total	245	100.0%	
Going to hospital when I feel sick	Very High	86	32.3%	2.73
	High	74	27.8%	
	Not High	55	20.7%	
	Very Low	51	19.2%	
	Total	266	100.0%	

Table 5 above shows respondents' preventive health behaviours during post-Ebola virus disease crisis. The mean value for each of the question items except item 4 (2.42) is above 2.5 indicating that the preventive health behavior of respondents during post-EVD crisis is good. Not handling dead bodies however, has a mean of 2.42. This implies that a good number of the respondents will not avoid dead bodies.

Table 6: Respondents' likely preventive health behavior in future EVD outbreak

Variable	Response	Frequency	Percentage	Mean
Not handling dead body	Very Likely	178	63.3%	3.46
	Likely	69	24.6%	
	Fairly likely	19	6.7%	
	Not Likely	15	5.4%	
	Total	281	100.0%	
Regular hand washing with soap and water	Very Likely	203	78.9%	3.70
	Likely	39	15.1%	
	Fairly likely	7	2.7%	
	Not Likely	8	3.1%	
	Total	257	100.0%	
Going to hospital when I feel sick	Very High	202	62.7%	3.30
	High	49	15.2%	
	Not High	36	11.1%	
	Very Low	35	10.8%	
	Total	322	100.0%	
Use of hand sanitizer to disinfect hands	Very High	171	66.3%	3.53
	High	63	24.4%	
	Not High	15	5.8%	
	Very Low	9	3.5%	
	Total	258	100.0%	
Taking personal hygiene seriously	Very High	149	80.1%	3.71
	High	25	13.4%	
	Not High	7	3.8%	
	Very Low	5	2.7%	
	Total	186	100.0%	
Not eating bush meat	Very High	165	68.7%	3.47
	High	40	16.7%	
	Not High	17	7.1%	
	Very Low	18	7.5%	
	Total	240	100.0%	
Avoiding indiscriminate contact with people	Very High	137	55.5%	3.38
	High	76	30.7%	
	Not High	24	9.7%	
	Very Low	10	4.0%	
	Total	247	100.0%	

From Table 6 above, shows respondents' preventive health behaviors should there be another outbreak of EVD. The mean value for each of the question items is above 2.5 indicating that respondents will likely practice preventive health behavior in future EVD outbreak.

3. Analysis and Discussion

Hypothesis One: Lagos residents will not have significant knowledge on the Ebola Virus Disease

Table 7: Chi-square analysis of Respondents knowledge on the Ebola Virus Disease

Variables	N	Mean	S.D	X ² calc	X ² tab	df	Remark	Decision
Respondents knowledge of EVD	274	1.09	0.17	1181.3	19.67	11	Significant	Rejected

From Table 7 above, the X² calc 1181.3 > X² tab 19.6 with a degree of freedom of 11 at 0.05 level of significance. Therefore, the null hypothesis is rejected while the alternate hypothesis which states that Lagos residents will have significant knowledge of the Ebola Virus Disease is accepted.

Hypothesis Two: Lagos residents will not have significant positive preventive health behavior in the post-Ebola Virus Disease outbreak.

Table 8: Chi-square analysis of Respondents preventive health behavior in post-EVD period

Variables	N	Mean	S.D	X ² calc	X ² tab	df	Remark	Decision
Preventive health behavior of Respondents in post-EVD	289	2.71	1.07	379.4	35.17	23	Significant	Rejected

From Table 8 above, the X² calc 379.4 > X² tab 35.17 with a degree of freedom of 23 at 0.05 level of significance. Therefore, the null hypothesis is rejected while the alternate hypothesis which states that Lagos residents will have significant positive preventive health behavior in the post-Ebola Virus Disease outbreak.

Hypothesis Three: There will be no significant difference between preventive health behavior during EVD outbreak and likely preventive health behavior in future occurrence among Lagos residents.

Table 9: Correlation analysis of Respondents preventive health behavior in post-EVD and likely preventive behavior in the future

Variables	N	Mean	S.D	r	Sig.	df	Remark	Decision
Preventive health behaviour post EVD	274	1.09	0.17	-0.64	0.018	253	Not Significant	Accepted
Preventive health behaviour future		2.7	1.06					

From Table 9 above, the r-value -0.64 < Sig 0.018 with a degree of freedom of 253 at 0.05 level of significance. Therefore, the null hypothesis is accepted which implies that there is no significant difference between Lagos residents' preventive health behavior in the post-Ebola Virus Disease crisis and likely preventive health behavior in future occurrence.

4. Discussion of Findings

That respondent in this study demonstrated high level of understanding of nature, transmission and prevention of EVD is not on expected; the massive educational intervention during the Ebola crisis may be a major factor.

According to CDC (2014) Ebola viruses are contagious. This being the case, prevention predominantly involves behavior changes: proper full-body personal protective equipment and disinfection. Key messages on EVD prevention are simple and almost the same in places where education interventions are employed. Omidian, Techoungue and Monger (2014) reported that “in all grouped interviewed, hand washing was often listed as the most important way of preventing EVD”. They also found that most households have bleach for washing clothes.

Apart from hand washing, another preventive measure is not touching dead bodies. Statistical output in this current study however did not show that the respondent buy into this idea; (a mean of 2.42 reflects on this question item in table 4). The reason for this may not be un-connected with socio-cultural practices in which people are entrenched. We like treating our dead with respect. Part of this include preparing the dead properly for burial by bathing the dead dressing for him. This traditional obligation is a common practice in Nigeria and may be difficult to stop so soon.

Omidian et al (2014) observed that death rituals are particularly dangerous and have implications for the spread of EVD: “the body would be washed, with women washing other women, men washing men’s bodies”. They further explained “the body would be placed on a mat or bed in the house. It is common to even sleep with body, lying next to it, kissing and touching it. There are rituals that include putting alcohol in the mouth of the dead and drinking it as a sign of love and respect”.

Respondents reporting continuous practice of preventive health behaviours in the current post-Ebola crisis is supported by statistical calculation ($X^2 379.4 > X^2 \text{ tab } 35.17$). In actual practice, this may not be the reality in that all the indices to support the practice are absent. For example, the schools are no longer providing water and soap. School children’s temperatures are not checked. The same slumber attitude is exhibited in banks and other public buildings. Even in most clinics now, standard precautionary measures are no longer taken; the researcher just had sample of his blood taken few days ago in a government health facility. The laboratory personnel who took the sample did not use gloves, no face mask either. The same neglect of standard precaution was observed during the doctor consultation/examination of the patient.

Unlike the claim of currently practicing preventive health behaviours against Ebola virus disease, discussed above, the respondents intention to engage in preventive health behaviour in the future may be genuine (r value $-0.644 < 0.005$). This intent may be based on the respondents’ observation of how deadly the EVD could be; and possibly realizing that anybody can contract the infection. This position finds an anchor in the Health Belief Model (Rosenstock 1966; Becker 1974 and Sharma and Romas, 2012). The essential elements of the model which trigger actual adoption of behavior are perceived threat and perceived seriousness of the expected consequences that may result. In summarizing the Health Belief Model, Nisbet and Gick (2008) explained:

In order for behavior to change, people must feel personally vulnerable to a health threat, view the possible consequences as severe, and see the taking action is likely to either prevent or reduce the risk at an acceptable cost with few barriers. In addition, a person must feel competent (have self-efficacy) to execute and maintain the new behaviour. Some trigger, either internal or external, is required to ensure actual behaviour ensues’.

5. Conclusion and Recommendations

From the findings of the study, it is concluded that the respondents are knowledgeable about the nature and transmission of the EVD. This may not be unconnected with massive education campaign mounted by the Ebola Emergency operations centre during the crisis.

The preventive health behaviours of the respondents during and after the Ebola crisis are also on the positive side. The respondents may not be described as crisis time health behaviour adopters.

Arising from this position the study recommends that continuous efforts to sustain the present positive health practices among the respondents should be maintained. Specifically, attention should be given to health education campaigns using various channels of communication, subsidizing cost of sanitizers, liquid wash, soap for schools by Government and donor agencies and the development of health clubs in schools for continuous creation of healthy practices.

Implication of the Study

One factor that is important in the feat of stemming the incidence of Ebola Virus Disease in Nigeria is the rapid response approach. Soliciting the expertise of other relevant professionals in battling the problem also contributed to the success recorded in the containment of the EVD in Nigeria. From the above, it is evident that if prompt action is taken whenever there are outbreaks of communicable diseases, a lot can be achieved. Moreso, when such action is backed with a well planned health education programme using a synergy of different format and channels. This study may be relevant to health planners (Government and NGOs). By taking a cue from the success story of the EVD in Nigeria, handling future occurrence of communicable diseases may be faster and easier.

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