

## **Risk Perception and Impact of Ebola Virus Disease on Work and Personal Lives of Nurses / Healthcare Workers in National Hospital Abuja**

Article by Elugbaju Opeolu Emiade  
RN, RPN, Texila American University, Nigeria  
Email: opegodchosen@yahoo.com

### **Abstract**

*Since its importation into Nigeria through a visitor from Liberia, Ebola Virus Disease was officially documented in Nigeria. Its consequences cut across all human experiences at personal, family, institutions and national levels. The victim suffers the effects of the illness and its stigmatization. One can therefore conclude that health workers generally are at risk of contracting this disease, inferably this may affect their work and personal lives. The aim of the study is to assess the level of risk perception and impact of Ebola on the work and personal lives of health workers at the National Hospital Abuja. The study adopted use of primary and secondary data. The primary data were derived from the field of study through administration of questionnaire. The secondary data consist of facts and figures from articles and journals. Relevant descriptive and inferential statistical techniques were used in the data analysis. The research revealed that 99% of the respondents display general knowledge of Ebola virus disease and its mode of transmission. The results revealed that many of the health workers have a high risk perception on contacting Ebola due to the lack of adequate treatment and rapid spread of virus during an outbreak. The findings of the research also noticed a high impact on respondents' work life where there is a lack of willing volunteers during outbreaks due to stigmatization. It was recommended that policies should be formulated to create quarantine centers in every state equipped to cater for prompt response during outbreak of communicable diseases.*

**Keywords:** Risk, Impact, Ebola, Nurses, Hospital, Abuja

### **Introduction**

The Ebola Virus Disease (EVD) epidemic in West Africa has ravaged the social fabric of three countries (Guinea, Liberia, and Sierra Leone) with a death toll of over 11,400 people and over 21,200 cases as of January 15, 2015. The disease was first noticed in Nigeria in 2014. In August 2014 the WHO declared it a Public Health Emergency of International Concern. Travel-associated cases have now been documented in five additional countries, and effects are being felt worldwide. By end of July 2014: a symptomatic case travelled by air to Lagos, Nigeria, where he infected several healthcare workers and airport contacts before his condition was recognised to be EVD.

Infections with Ebola viruses originating from Africa cause a severe disease in humans called Ebola virus disease. There are five species of the genus Ebolavirus (Filoviridae family): Zaïre ebola virus, Sudan ebola virus, Reston ebola virus, Taï Forest ebola virus and Bundibugyo ebola virus. The current outbreak in West Africa is caused by Zaïre ebola virus. The viruses can survive in liquid or dried material for many days. They are inactivated by gamma irradiation, heating for 60 minutes at 60 °C or boiling for five minutes, and are sensitive to sodium hypochlorite (bleach) and other disinfectants. Freezing or refrigeration will not inactivate Ebola viruses. The Human-to-human transmission of the Ebola virus is primarily associated with direct or indirect contact with blood and body fluids. Transmission to health-care workers has been reported when appropriate infection control measures have not been observed.

The danger posed by emerging infectious diseases has resulted in significant stress and concerns amongst nursing personnel. Since nurses are one of the frontline health care providers, they are at risk during infectious disease outbreaks. Understanding their fears and anxieties may hold lessons for handling future outbreaks, including acts of bioterrorism.

Consequently, the researcher decided to study the risk perception and impact of Ebola disease on work and personal lives of nurses/ healthcare workers in National Hospital a tertiary care hospital Abuja Nigeria.

Since December 2013, and as of 12 October 2014, 8 997 cases of EVD, including 4 493 deaths, have been reported by the World Health Organization (WHO) in seven reporting countries (Guinea, Liberia, Nigeria, Senegal, Sierra Leone, Spain and the USA). One additional case was reported by the USA on 14 October in a second healthcare worker in Dallas, Texas, who tested positive for Ebola virus after having cared for the first case in the USA.

The consequences and impact of the Ebola virus infection cut across all human experiences at personal, family, institutional community and national levels. The Ebola virus victim suffers not only effects of the illness, but also stigmatization. The disease was imported into the country through a visitor from Liberia EVD was officially documented in Lagos (Lagos State) and Port Harcourt (Rivers State in Nigeria).

The effective response to Ebola virus disease (EVD) crisis in National Hospital Abuja required unhindered interdepartmental movement of nurses/ health workers. The National Hospital Authority is urging all departments to support and facilitate this and ensure that nurses/health workers that participate in the treatment of EVD patients are treated with respect and without discrimination.

Nurses / health workers are central to the effort of the hospital in containing and combating the disease. Stigmatization and discrimination against them with no scientific basis will inevitably lead to human resource crisis at a time when the hospital needs experienced and competent Nurses/health workers to join the fight against Ebola.

The main aim of the study is to assess the level of risk perception and impact of Ebola virus disease on the work and personal lives of nurses / health workers at the National Hospital Abuja.

The specific objectives were to:

1. Assess the risk /perception of contacting Ebola virus disease by Nurses/health workers
2. Determine the impact of perceived Ebola virus disease on their personal life
3. Determine the impact of perceived Ebola virus disease on their work life.
4. Determine the level of use of universal precaution measure to prevent EVD n National Hospital.
5. Make recommendations based on the findings of this study.

This study was limited by the following:

1. Limited literature review on the risk perception and impact of Ebola virus disease on the personal and work life of nurses and Health care workers in Nigeria.
2. Ebola virus disease was not actually recorded in Abuja.
3. Lack of time in the research process.

During epidemics, healthcare institutions have a duty to protect Nurses/ HCWs and help them cope with their personal fears and the very stressful work situation. In view of the above the significance of this study are as follows:

- i. Attract more funding for preparedness and prevention of emerging infectious diseases by the government and global partners.
- ii. Training and retraining of nurses /health workers on proper handling of suspected Ebola virus disease.
- iii. Enhance more participation of nurses/health care workers in the diagnosis, and treatment of confirm cases of EVD

iv. For the research study to be accepted for participation.

## Methods

The area of the study is National Hospital, Abuja located on Plot 132, Central Business District, PMB 425, Garki, Abuja. The hospital was established under Decree 36 of 1999 (now act 36 of 1999). The hospital was commissioned by the former Head of State, His Excellence, General Abdulsalam Abubakar and opened to public use on 11<sup>th</sup> October, 1999 when the first female baby was delivered. The hospital has two main clinical departments, Medicine and Surgery with about 25 units. She is a tertiary level hospital. The target population for this research is members of staff of the hospital with special reference to the clinical staff, doctors, nurses, radiologists and scientists.

Descriptive non-experimental design was used to examine the risk perception and impact of ebola disease on work and personal lives of nurses and health workers in National Hospital, Abuja. For the purpose of this study, the systematic probability sampling method was used. One hundred out of a thousand members of clinical staffs were selected randomly to participate in the research. A well-structured questionnaire was used to obtain information from the healthcare workers. The questionnaire included 25 items regarding socio-demographic characteristics (6 items), general knowledge of ebola disease and prevention (6 items), risk perception on ebola by nurses and other health workers (9 items) and the impact of ebola disease on working and personal lives of nurses and other health workers (4 items).

Data was entered into Microsoft Excel format after it has been checked for errors. The chi-square test was used to evaluate difference in the proportion of respondents according to job category (physicians, nurses and other, sex, age). Also, the data was analyzed using the statistical method of percentile method and presented on frequency distribution tables, pie chart and bar chart.

## Results and discussion of results

The result shows that the respondents interviewed were aged 21 and 60 years. About 27% were below 30 years while 61% were between 31-60 years. Only 12% of the respondents were 51 years and above (see table 1). Single men and women constitute 37% of the respondents while 60% were married, 3% of the respondents were widower, divorced, and separated from spouses. Most of the respondents 72% were Clinical / Nursing Services while 25% were Laboratory / Radiology Services. Non-Clinical Services constitute only 3%.

The study was carried out to determine the risk perception and impact of ebola disease on work and personal lives of nurses and health care workers in national hospital Abuja, Nigeria. The results are discussed as follows:

### Research question 1

#### What is the risk perception of contacting ebola virus by nurses/ health workers?

Risk perception is the subjective assessment of the probability of a specified type of accident happening and how concerned we are with the consequences. To perceive risk includes evaluations of the probability as well as the consequences of a negative outcome. It may also be argued that as affects related to the activity is an element of risk perception. Perception of risk goes beyond the individual, and it is a social and cultural construct reflecting values, symbols, history and ideology.

On the cause of ebola disease, about 99% of the respondents displays general knowledge of ebola virus disease being caused by a virus transmitted to people from wild animals and spreads in the human population through human to human transmission. The results presented in table 3 reveals that many of the nurses/healthcare workers have a high risk perception on contacting ebola due to the lack of adequate treatment and rapid spread of disease virus during an outbreak due to poor control measures and awareness 56% and 50% respectively, also coupled with their strong agreement to the fact that they have little control over getting infected with the virus.

There is increasing need for effective risk communication which may help save life. One way to build trust and reduce the risk perception as highlighted by Michele Bellone of Tell Me Experts is the organizations to establish a presence on the media especially on the social media long before the emergence of a crisis. Developing a two-way communication with the other stakeholders (i.e. media/health) because they are a mediating channel between health agencies and the public. This is evident as 47% of the respondents first learn of ebola disease through the media, 31% through literature, 17% learnt in the hospital while 5% learnt of it from friends/family. The finding shows the respondents risk perception on ebola disease where 56% of the respondents fear death due to lack of adequate treatment during the disease outbreak.

### **Research question 2**

#### **What is the impact of perceived ebola virus on their personal life?**

The result presented in table 4 reveals that three quarter of the respondents were afraid of the impact of contacting the disease virus as the was no adequate care leading to an on timely death of the person, also the fear of spreading the virus to members of their family and ultimately the society at large.

About 85% strongly agrees to the fear of being stigmatized even by professional colleagues as related to Mr. Sidie, a laboratory technician from Sierra Leone who is a lucky survival of EVD but continues to face stigmatization, as such he lost many friends and relations.

### **Research question 3**

#### **What is the impact of perceived ebola virus on their work life?**

The result from table 4 shows that the was a high impact on respondents work life where the is a lack of willing volunteers during disease outbreaks cause of the stigmatization associated with such disease, also reaction from the members of society. Fear of becoming infected by their own patients which led to some healthcare workers' refusal to go to work and also fear of being stigmatized. Findings also reveal that it is high with 64% impact on lack of willing volunteers to work during the disease outbreak due to the risk perception though 36% is of the opinion of a low extent of impact to lack of willing volunteers.

Coincidentally, 79% of the respondents strongly agreed to be afraid of the contacting ebola virus, 15% disagree while 6% strong disagree to that.

### **Research question 4**

#### **What is the level of use of universal precaution measures to prevent ebola virus disease in National hospital?**

The result in figure 2 shows that there is a high use of the universal precaution measure in national hospital by respondents in the various departments, showing a high awareness of the benefit of the measures for the safety from communicable diseases. Out of the respondents only 1 reported not to use the universal precaution measure.

The role of healthcare workers ensuring standard precautions when caring for patients, regardless of their presumed diagnosis, 98% of the respondents believes universal precaution measure is effective to prevent ebola transmission while 2% think otherwise. At National Hospital Abuja, hand washing, hand sanitizers, gloves, vaccination and protective garments are some of the universal precaution measures in use. 40% of the respondents make use of all the measures mentioned while 59% uses at least 3 of the measures in their departments, 1% believed to be in the non-clinical makes use of none.

### **Suggestions for further study**

Factors influencing the utilization of universal precaution measures during an outbreak in National Hospital Abuja.

## Conclusion

According to WHO, 815 healthcare workers who had been infected by the ebola virus since the onset of the epidemic, more than 50% were nurses and nurse aides. Two thirds of the health workers who had been infected were dead. Therefore, the need for safe working environment for nurses and others healthcare workers on the frontlines of healthcare. The devastating number of nurses who have lost their lives shows there is clearly an essential need for significant strengthening of safety polices and the provision of adequate precaution measures and the appropriate training for use.

The report by ICN indicates that 'health workers are 21-32 times more likely to be infected with ebola' than are adults in the general public, while nurses account for more than 50% of all health workers infected, doctors and medical students account for 12%, and laboratory workers account for 7% each.

Ebola infection among healthcare workers have had a devastating effects on health system, including closure of hospitals, depletion of the much need healthcare workforce and distrust in the health system. The WHO report further states that ebola 'has exacerbated the preexisting shortage of the health workers, high rates of attrition, uneven distribution, poor employment conditions and gaps in occupational health and safety in three of the infected countries [Guinea, Liberia, and sierra Leone].

## Figures

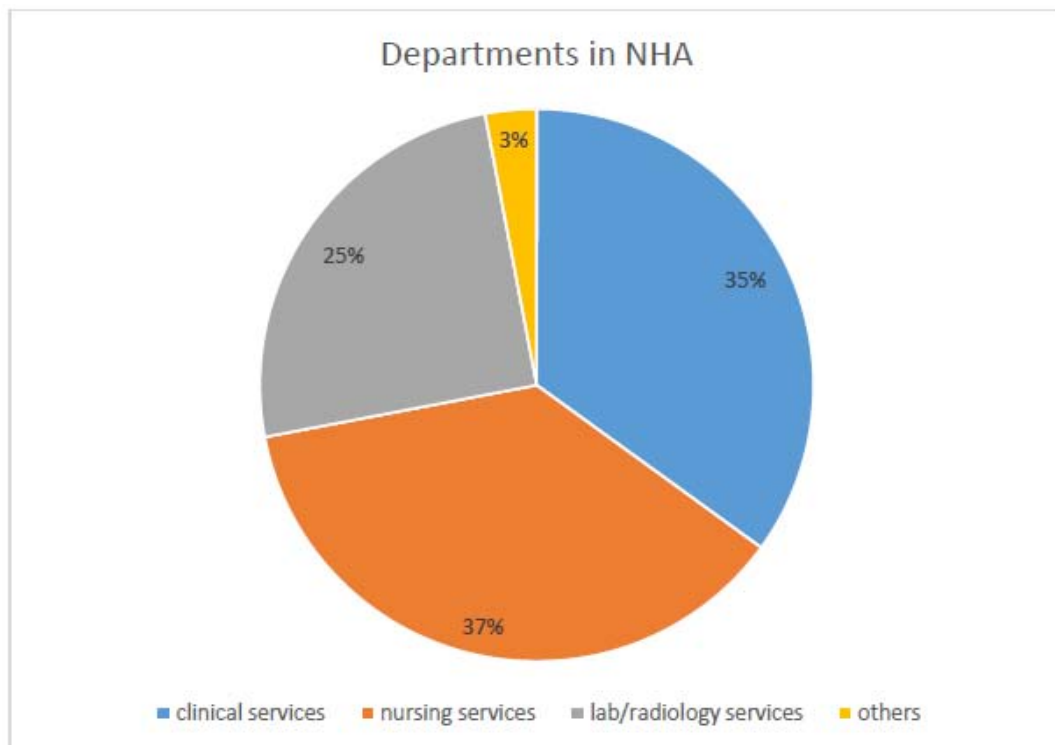
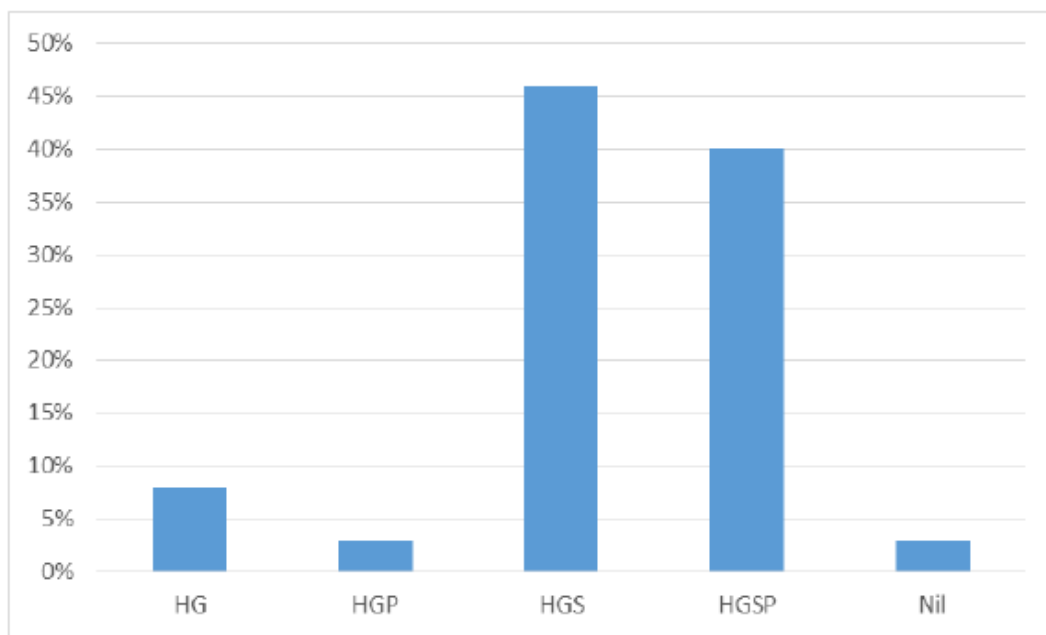


Figure 1. Pie Chart showing percentage distribution of respondents' departments in NHA (n=100)



**Figure 2.** Bar Chart showing percentage distribution of precaution measures used by respondents

**Table 1.** Distribution of Socio- demographic characteristics of respondents (n-100)

Characteristics		Frequency	Percentage (%)
Age	21-30years	27	27%
	31-40years	41	41%
	41-50years	20	20%
	51-60years	12	12%
Ethnicity	Igbo	35	35%
	Yoruba	25	25%
	Hausa	9	9%
	Others specify	31	31%
Religion	Christianity	72	72%
	Islam	28	28%
	Traditionalist	-	
	Others specify	-	
Academic Attainment	Secondary education	-	
	Tertiary education	89	89%
	Post-graduate education	11	11%
Marital status	Single	37	37%
	Married	60	60%
	Divorced	-	
	Widower	3	3%

**Table 2.** Distribution of Respondent's General Knowledge of Ebola Disease and Preventive Measures (n-100)

Characteristics		Frequency	Percentage (%)
Ebola disease is caused by?	Bacteria	-	-
	Fungi	-	-
	Protozoa	1	1%
	Virus	99	99%
Where did you first learn of Ebola disease?	Hospital	17	17%
	Mass media	47	47%
	Literature	31	31%
	Friends/ Family	5	5%
Ebola is transmitted by direct or indirect contact with infected blood or body fluids?	Yes	96	96%
	No	4	4%
Ebola disease can be treated with early detection of the virus?	Yes	88	88%
	No	12	12%
Universal precaution measures is effective to prevent Ebola transmission?	Yes	98	98%
	No	2	2%
What universal precaution measures are used in national hospital, hand washing, hand sanitizer, gloves, vaccination and protective garments?	All of the above	40	40%
	At least 3 of the measures	59	59%
	None	1	1%

**Table 3.** Distribution of Risk Perception of Respondents on Ebola Disease (n-100)

Characteristics		Frequency	Percentage (%)
Fear of death to lack of adequate treatment?	Strongly agree	56	56%
	Agree	38	38%
	Disagree	4	4%
	Strongly disagree	2	2%
Stigmatization by professional colleagues?	Strongly agree	34	34%
	Agree	51	51%
	Disagree	10	10%
	Strongly disagree	5	5%
Contact of the virus can lead to immediate termination of job	Strongly agree	8	8%
	Agree	22	22%
	Disagree	46	46%

appointment?	Strongly disagree	24	24%
There is a rapid spread of disease virus due to poor control measures and awareness?	Strongly agree	50	50%
	Agree	34	34%
	Disagree	15	15%
	Strongly disagree	1	1%
Do you accept the risk of getting EVD as part of your job?	Strongly agree	17	17%
	Agree	38	38%
	Disagree	26	26%
	Strongly disagree	19	19%
Do you have little control over getting infected with the virus?	Strongly agree	12	12%
	Agree	46	46%
	Disagree	32	32%
	Strongly disagree	10	10%
Are you afraid of contacting Ebola virus?	Strongly agree	48	48%
	Agree	31	31%
	Disagree	15	15%
	Strongly disagree	6	6%
Would you look for another job or consider resigning because of the risk in an outbreak?	Strongly agree	15	15%
	Agree	21	21%
	Disagree	45	45%
	Strongly disagree	19	19%

**Table 4.** Distribution of impact of Ebola disease on respondents (n=100)

Characteristics		Frequency	Percentage
To what extent is there a lack of willing volunteers for work during disease outbreak?	High	64	65%
	Low	36	36%
To what extent are you afraid of contacting EVD?	High	78	78%
	Low	22	22%
To what extent are you afraid the Ebola will spread to your family and friends?	High	67	67%
	Low	33	33%
Society's anxiety against contact with health care workers during outbreaks is?	High	95	95%
	Low	5	5%



**Table 5.** Statistical illustration of association between risk perception of the impact of Ebola virus on the personal and work lives of nurses/ health workers in relationship to departments in national hospital

Variables	Departments in National Hospital				Pearson chi-square $X^2$ (p-value)	Df	Remark
	Clinical services	Nursing services	Radio/ lab service	other			
To what extent is there a lack of willing volunteers for work during disease outbreak?	High	25	23	13	2	6	No significant association
	Low	10	14	12	1		
To what extent are you afraid of contacting EVD?	High	27	31	18	2	3	No significant association
	Low	8	6	7	1		
To what extent are you afraid the Ebola will spread to your family and friends?	High	24	27	16	-	3	No significant association
	Low	11	10	9	3		
Society's anxiety against contact with health care workers during outbreaks is?	High	33	37	22	3	3	No significant association
	low	2	-	3	-		

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