

# **THE PERCEPTION OF NIGERIAN TRADERS ABOUT THE SYMPTOMS AND TRANSMISSION OF EBOLAVIRUS DISEASE**

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## **ABSTRACT**

This is a study carried out to gauge the perception of market men and women about Ebola virus disease and its transmission. It is a cross-sectional questionnaire based study, in which 126 market men and women were involved. This study became imperative going by the fact that Nigeria was just recently let off the hook of the ravages of the virus, and the government of Nigeria pellucid engagement in mass media campaign to enlighten the citizens about the symptoms and various modes of transmission of the disease, because the virus still causes serious devastation in nearby West African countries of Liberia, Sierra Leone, Guinea, and most recently Mali, and as not to make a ludicrous mistake of allowing another Ebola panic in the country.

The analysis of the data was done using IBM SPSS; descriptive statistics to get the general characteristics of the study participants. Chi-square test was used to determine the level of significance of groups of categorical variables. P values < 0.05 were considered significant.

The data analysis showed that 126 out of the 150 respondents returned the questionnaires completely filled, representing 84% of the respondents. The respondents showed a poor knowledge of animal to man mode of transmission, 20.7% of this mode chosen by the respondents is that EVD can be transmitted through the eating of well cooked meat of the known EVD infected animals. 72.3% of the respondent identified at least two man to man modes of transmission and 68.7% of the symptoms of Ebola identified include at least one of the early symptoms of EVD.

The study concluded that the knowledge shown by the respondents is mixed; there was a good knowledge of man to man mode of transmission while the knowledge of the animal to man mode of transmission is poor while that of the symptoms of the disease is average.

## **KEYWORDS**

Ebola Viral Disease, Nigerian traders, Symptoms, Transmission.

## **INTRODUCTION**

The short reign of terror of Ebola in Nigeria, brought with it great panic, it redefined conviviality, even hoi polloi dared not exchange greetings making bodily contacts, a strange modus vivendi in Africa, children's playtime became a quietude no longer rambunctious, regular hand washings became a norm, obsequies no longer attract multitudes of sympathizers, the entire societal fabric was in a pell-mell. At its quietus, 19 Nigerians were affected by the index case, a Liberian, that travelled by air into Nigeria, out of which 7 Nigerians died with the index case been the 8<sup>th</sup>, the case fatality of the disease in Nigeria was 36.8% but with the inclusion of the index case it pellucid became 40%, just a bit off the WHO average rate of 50%. <sup>(1)</sup>

This study therefore, intends to study the knowledge of the symptoms and the various modes of transmission of Ebola virus disease among Nigerian traders. The study is necessary to establish the effectiveness of the educational measures adopted by the government to educate the populace about the disease.

## **MATERIALS AND METHODS**

The study was done using questionnaires and cross sectional. It was carried out among market women and men in a popular open market in Southwest Nigeria. All categories of traders were involved. Ethical approval was obtained before the commencement of the study from the management of the market, who also invited the researcher to many of their weekly market meetings where the traders were intimated about the aims of the study.

## **DATA ANALYSIS**

The analysis of the data was for bio-data, response regarding their response to the mode of transmission of the disease, the symptoms of the disease, how easily they feel the disease can be spread from those that are sick of it and from the animals infected with the Ebola virus disease. IBM SPSS was used in the analysis of the data; descriptive statistics was used to get the general characteristics of the study participants. Chi-square test was used to determine the level of significance of groups of categorical variables. P values < 0.05 were considered significant.

## **RESULTS**

**Table 1: Age Distributions**

<b>Age Range</b>	<b>Number of Respondents</b>	<b>Percentage</b>
21-30	28	22.2
31-40	46	36.5

41-50	30	23.8
51-60	12	9.5
61-70	10	8.0
	<b>126</b>	<b>100.0</b>

Table 1 shows that 36.5% of the respondents are within the 31-40 age range, 23.8% within the age range 41-50 and 22.2% within the age range 21-30. The median age is 38.1 years, the mode is 35.8 years, and the mean is 39.9 years.

**Table 2: Education Level**

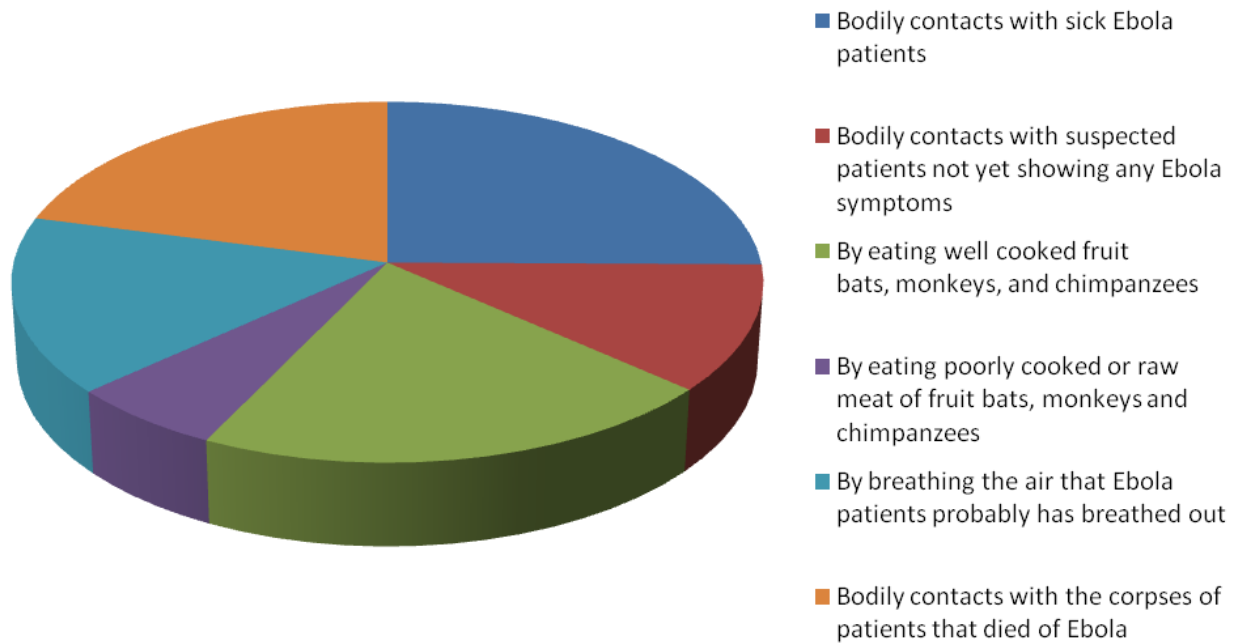
<b>Responses</b>	<b>Number of Respondents</b>	<b>Percentage</b>
No Formal Education	12	9.5
Primary Uncompleted	8	6.3
Primary Completed	6	4.8
Secondary Uncompleted	13	10.3
Secondary Completed	51	40.5
Post Secondary	36	28.6
	<b>126</b>	<b>100.0</b>

Table 2 shows that 40.5% of the respondents completed Secondary School while 28.6% have Post Secondary School education and 10.3% of the respondent started but didn't complete Secondary School education.

**Table 3: Mode of Transmission of Ebola to Man**

<b>Responses</b>	<b>Number of Respondents</b>	<b>Percentage</b>
By having bodily contacts with sick patients already showing Ebola	124	25.2

symptoms		
By having bodily contacts with a suspected patients not yet showing Ebola symptoms	56	11.3
By eating well cooked meat of fruit bats, monkeys and chimpanzees	102	20.7
By eating poorly cooked or raw meat of fruit bats, monkeys and chimpanzees	30	6.1
By breathing the air that sick Ebola patients breathe out	78	15.8
By having bodily contact with the dead bodies of Ebola victims	103	20.9
	<b>493</b>	<b>100.0</b>



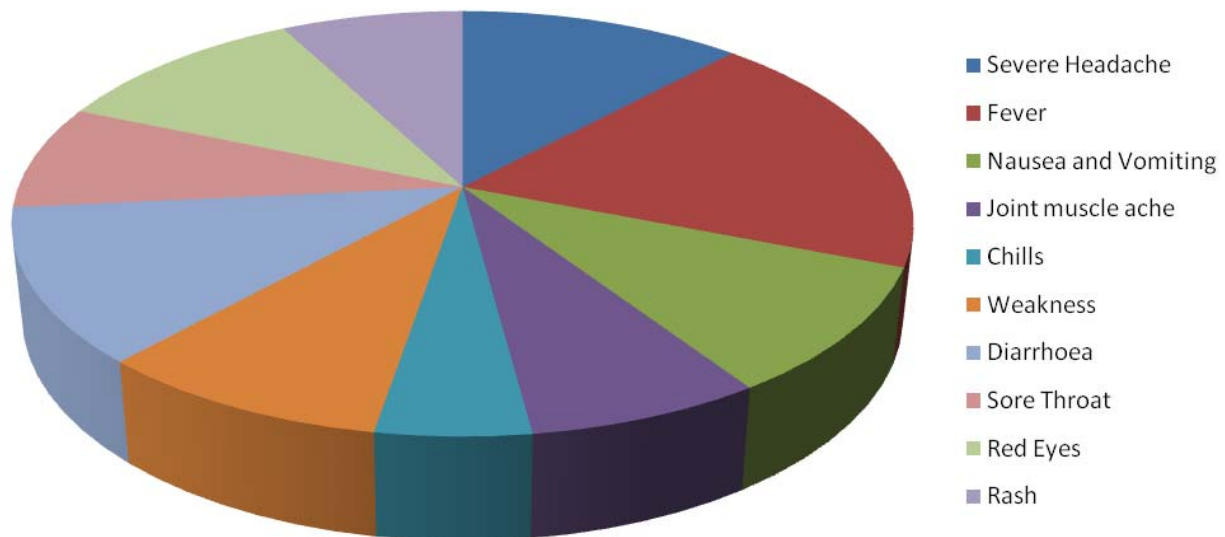
**Figure 1: Mode of Transmission of Ebola to Man**

Table 3 and Figure 1 show that 25.2% of the respondents were aware that Ebola can be transmitted by having bodily contact with patients already showing symptoms of Ebola, 20.9% knew one can contract Ebola by having bodily contact with the corpse of someone that died due to Ebola viral disease. And 20.7% felt that one can be infected with Ebola virus by eating well cooked meat of fruit bats, monkeys and chimpanzees.

**Table 4: Symptoms of Ebola**

Responses	Number of Respondents	Percentage
Severe Headache	536	12.0
Fever	850	19.0
Nausea and Vomiting	434	9.7
Joint muscle ache	324	7.2
Chills	212	4.7
Weakness	407	9.1
Diarrhoea	524	11.7

Sore Throat	356	8.0
Red Eyes	487	10.9
Rash	345	7.7
	<b>4475</b>	<b>100.0</b>



**Figure 2: Symptoms of Ebola**

Table 4 and Figure 2 show that the most recognized symptoms of Ebola among the respondents are Fever 19%, severe headache 12%, Diarrhoea 11.7%, Red eyes 10.9%, Nausea and vomiting 9.7%, Weakness 9.1%, and Sore throat 8%.

## DISCUSSION

Majority of the respondents (92%) are below 60 years in age, the active working age group; with 36.5% within the 31-40 years age group, 23.8% within the age group 41-50 years, 22.2% within the age group 21-30, and 9.5% within the 51-60 age group. The age distribution of these traders is comparable to the findings in a study done in the same geographical zone of Nigeria with this study, it was shown that 38% were in the age range of 18-30, (34.6%) in 31-40, 41-50 (16.8%) in 41-50 and 8.4% were over 50 years old. <sup>(2)</sup> The preponderance of people between 21 years and 50 years among the respondents can be explained mainly because of the scarcity of the white collar jobs in Nigeria, and this has driven majority of the people in these active working age group into trading and other small scale businesses, mostly after they had searched in vain to secure for themselves a well paying job. This is further corroborated by the fact that that 38.9%

of the respondents have at least completed their secondary school education with 28.6% having a post secondary education.

Most of the respondents are females (63.6%) while the males are 36.4%, also agreeing with a study done using a sample of the open market traders in the same geographical region, where the finding was that 59.8% were females and the rest were males. <sup>(2)</sup>

The knowledge shown by the respondents about the animal to man mode of transmission of the virus is extremely poor, since 20.7% of the mode of transmission chosen by the respondent is the belief that one can get infected with Ebola virus by eating well cooked meat of the animals believed to be the reservoirs of the virus, that is, fruit bats, monkeys and chimpanzees, while only 6.1% of the mode of transmission chosen is by eating poorly cooked meat of these animals, this is particularly alarming, because this means that most of the respondents are oblivious of the potentiality of having an animal to man transmission of the disease, through the handling of raw meat of these animals and eating poorly cooked meat of these animals. This is based on the fact that it is scientifically believed that there are unknown physiological and environmental conditions, contacts between the reservoir (potentially certain fruit bat species) and non human primates (monkeys, gorillas and chimpanzees) that can trigger epizootic outbreaks. <sup>(3)</sup> Human infections may also occur through the handling of animal carcasses, as shown in the 2001 outbreaks in Gabon and Democratic Republic of Congo. <sup>(4, 5)</sup> There is even the suspicion that there may be direct transmission from these animals to humans as was the case in Luebo. <sup>(6)</sup>

The picture is however, not as gloomy with the knowledge of man to man mode of transmission, since 72.3% of the respondents were able to identify at least two of the man to man mode of transmission. 25.2% of the mode of transmission chosen is that it can be through bodily contacts with Ebola virus disease patients already showing symptoms, and 20.9% of the mode of transmission chosen is by having bodily contacts with dead bodies of people killed by Ebola virus disease. The infection, is believed, to spread by person-to-person contact, through body fluids, medical care and burial practices. <sup>(7)</sup>

15.8% of the mode chosen is by the inhalation of the air exhaled by the sufferers of the disease, a pathetically similar findings with a study done in Sierra Leone where 30% of the respondents believed that the virus can be transmitted through the air, <sup>(8)</sup> and 11.3% by having bodily contacts with people suspected of having the disease but not yet showing any symptom of the disease. Meanwhile it is known that transmission relies on direct contact with bodily fluids containing the virus, either through broken-skin or through mucous membranes, and this is possible when they are already symptomatic. Airborne, droplet- aerosol transmission does not seem to be a popular mechanism of spread, though it is possible that this does occur. <sup>(9)</sup>

The knowledge of the early symptoms of Ebola virus disease is fairly good, since 68.7% of the symptoms of Ebola virus disease chosen by the respondents includes at least one of the early symptoms of the disease: 19% of the symptoms of Ebola virus disease chosen was fever, 12%

was severe headache, weakness 9.1%, sore throat 8%, joint muscle ache 7.2% and chills 4.7%, this knowledge becomes significant because most of the early symptoms of the disease resemble those of malaria which is endemic in Nigeria, but on the whole many of them are still unaware of the plethora of the symptoms that are associated with the disease, only (38.7%) chose correctly more than two or more early symptoms of the disease, this is worrisome, since many may still not be able to suspect the disease early enough so as to seek medical intervention.

## **CONCLUSION**

This study, thus, makes the following conclusions:

There is a poor knowledge among the respondents about the animal to man transmission of the Ebola virus, the failure of most of them to know that by handling raw meat of the infected animals with bare hands or eating the poorly cooked meat of these animals that are infected with the virus is lugubrious, only 6.1% of the mode of transmission chosen by the respondents was the conviction that the virus can be transmitted through handling of the raw meat of these animal reservoirs.

Most of the respondents (68.7%) were able to identify at least one of the early symptoms of the disease. Though, the knowledge of two or more of the early symptoms of the disease is extremely poor (38.7%). This is despite the aggressive information on identification of early symptoms by various levels of government, using different arms of the media.

The knowledge about man to man transmission of the disease was quite impressive, 72.3% of the respondents were able to identify at least two modes of man to man transmission of the disease.

15.8% of the mode of transmission chosen is that people can be infected, when they breathe the air the Ebola virus disease victims exhaled, otherwise, they believe that the virus is airborne.

## **RECOMMENDATIONS**

The content of the campaign strategy being currently used, should be made to contain information on animal to man transmission of the disease.

More efforts should also be put into educating the people about the established scientific accepted ways of transmitting the disease, it is out of place that some of the respondents believed the disease is airborne.

Though, the present education campaign on how to prevent EVD, clearly informs the people about the symptoms of the disease, more efforts should be put into the design of the education campaign messages to make them more educative, since the respondents in this study, though were able to identify at least one of the early symptoms, their knowledge of two or more of these symptoms was abysmally low.



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