From a Single Case to Epidemics: Fear and Misconceptions Mitigating Against Effective Control of *Ebola Virus* Disease Outbreak in South-Western Nigeria

Sir,

The recent outbreak of *Ebola virus* disease (EVD) in parts of West Africa, including Nigeria, caused a global alarm in the four decade history of the disease. *Ebola* is one of the *flaviviruses* and among the most virulent human viral pathogens, causing coagulation defects, and severe hemorrhagic fever that resembles fulminant septic shock.[1,2] Case fatality rates in epidemics range from 80% to 90%.[3] False information has been spread by nonorganized sectors and the communities. The news going round about *Ebola* was frightening, and this fostered suspicion and anxiety in communities and within health care settings making people reluctant to seek health care or bring their family members for screening and management.

Lagos State government heightened tension when she announced giving incentives to health care workers wishing to volunteer to touch or treat patients with confirmed diagnosis of EVD. The fear of spread of the EVD may have affected the economy of Nigeria going by cancellation of flights by airlines, restriction of movements of people from epidemic-prone countries, closure of borders with neighboring countries, and mortality and morbidity among infected people. Dispelling these fears, myths and misconceptions was perhaps the biggest challenge in tackling EVD. The magnitude of this challenge should be assessed.

A descriptive cross-sectional study was carried out using Lagos and Osun States as study areas. The study population consisted of the urban adults aged 18 years and above. A total of 810 community members were selected using multistage sampling method. Research instruments consisted of interviewer administered semi-structured pretested questionnaires in the 1st and 2nd weeks of August 2014. Data were analyzed using the SPSS for Windows software version 17.0 (SPSS Inc, Chicago, IL, USA).

Eight hundred respondents were interviewed. Their mean age was 43.8 (3.7) years with 671 (83.9%) them aware of EVD. The leading sources of information were the media 612 (91.2%) and friends and relatives in 421 (62.7%) among the 671 respondents who were aware of EVD. One hundred and forty-three (21.3%) and 528 (78.7%) of the 671 had good knowledge and had poor knowledge scores of EVD. Attitude scores to the disease was good among 392 (58.4%) of 671 respondents, though 89 (11.1%) of the 800 interviewed would not volunteer to take care of EVD patients either as health care workers or as community services volunteers.

Some of the myths and misconceptions found were: That *Ebola* was a brand new disease, was mysterious, it was both water and airborne and it might be dangerous to give humanitarian aids to EVD patients; and it could be cured with antibiotics, by rubbing *Aloe vera* creams, drinking condensed milk, cow urine, or appreciable quantity of onions. Respondents believed EVD could be prevented by taking daily hot water bath with salt, or eating bitter or miracle kola, and appreciable quantity of onions. There was no statistically significant association between age, sex, or level of education of respondents and awareness of EVD ($P > 0.05$).

The media being the leading source of information showed that it is a veritable means of disseminating information about health and health-related events though bias of perception may depend on the channel of communication.[4,5] Television and radio were used in disseminating the progress of the Nigerian response to the epidemic and efforts toward prevention and control. High awareness and poor knowledge were found to have characterized the Nigerian epidemic. When in-depth knowledge is lacking, there is a high probability that misinformation and wrong information would be passed from one person to the other – a situation that may also hinder disease control.[6]

It takes close contact, not just casual contact with blood and body fluids of infected persons to be infected with the virus.[7] This will explain the high risk faced by health care workers and family members caring for the infected persons. Government efforts at curtailing mass gathering and movement amidst poor economic status people of West African countries may lead to pockets of communal and constitutional crisis in many countries still ravaged by the epidemic. However, many of these countries have lessons to learn from the Nigerian response that has been widely adjudged as impressive and successful through effective communication, active public health surveillance, and community participation in form of cooperation with governments and the health system.

Several of the reported misconceptions were probably due to misinformation about EVD. The EVD is not a new disease. Though the year 2014 was perhaps the 1st time EVD outbreak was reported in Nigeria, the virus was first recognized in humans in 1976 in the Democratic Republic of Congo, where it infected hundreds of people with high fatality. The 2014–2015 *Ebola* epidemic caused by the *Zaire* species of virus was not only the first to occur in West Africa but was far larger than all previous outbreaks combined.[8] The misconception on the use of hot bath with salt inside water or rubbing of salt on the

body, excessive eating of bitter and miracle cola, onion and condensed milk, and drinking cow urine among others should be discouraged through mass public health education since they have not been proven to be effective.

The mobile telecommunication technology and the social media (SM) are fast and huge avenues for creating and spreading health awareness about EVD most especially among youths. On a daily basis, about 5–6 million people visits social networking sites such as Facebook and Twitter worldwide, thus creating an online community that drives the creation of awareness in many different ways and for multiple purposes.[9] Many users of SM networking sites could have repackaged the information they received and fuelled the system with unguided information, thereby fostering suspicion and anxiety. It is thus important for the concerned authorities to create awareness about limitations of information on SM among users as well as regulate its use.

In addition to government, the media and the health system taking steps to improve awareness, community leaders also have roles to play in dispelling myths and misconception about EVD to improve knowledge about the disease as well as encourage behavioral change toward effective disease prevention and control.

Prevention and control of EVD include wearing of protective gadgets and regular hand washing, good case management, safe burial practices, active epidemiological surveillance, and most importantly creating and sustaining awareness drive so that right steps would be taken by communities at the right time. Rumors and denials might have fuelled the spread of *Ebola* in West Africa putting more lives at risk. Breaking the chain of EVD transmission in West Africa would require combating the fear surrounding it and earning the trust of communities. This can be done by creating good awareness about EVD, dispelling myths and misconceptions, and taking all possible steps toward timely disease management, control, and prevention.

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