

How Prepared Are Nigerian Schools for Ebola Virus Disease Prevention and Control?

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ABSTRACT

Background: Nigeria was one of the West African countries gripped by the fear of the spread of the Ebola virus disease (EVD), leading to a long period of delay in resumption of primary and secondary schools for academic activities in September 2014. The aim of this study was to assess the preparedness of schools in the north central region of Nigeria toward EVD prevention and control within 1 month of resumption of schools.

Methods: This was a descriptive cross-sectional study among 76 schools selected using a multistage sampling method. Research instruments were self-administered, semi-structured questionnaires. Data was analyzed using the SPSS software version 17.0.

Findings: Half (38) of the schools reported that some of the children could have traveled to EVD-infected areas during the holiday period; 77.6% (59) had their teachers formally trained on EVD prevention and control before resumption; 50% (38) set up a committee on EVD prevention; and 62.9% (63) carried out awareness-raising activities on school assembly ground. Based on some preventive measures criteria, 55.2% (42) were categorized ready, whereas 44.7% (34) were not ready for EVD prevention and control within 1 month of resumption of students back to school. About 76.3% (58) said they would like to sustain these EVD prevention efforts; 14.5% (11) would like to sustain such efforts at least until the end of the present term. Determinants of readiness for EVD prevention and control include being a private school, being an urban school, belief that children could have traveled to an EVD-infected area, and school having standard operating procedure or policy guidelines on EVD prevention and control.

Conclusion: The persistent call for postponement of school resumption might have been due to the unpreparedness of many of schools to meet EVD prevention and control guidelines. Schools need to take more proactive and sustainable measures toward effective control of the ongoing epidemic and prevention of future occurrences.

Key words: Ebola virus disease, preparedness, prevention and control, schools

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INTRODUCTION

West Africa has just witnessed the largest outbreak of Ebola viral disease (EVD) ever recorded. During the period of outbreak, the fear of the spread of EVD redefined the importance of epidemiologic surveillance worldwide, most especially in the West African subregion. Economic,

health, and development indices of many counties were badly affected. The apprehension was high to the extent that Nigerian governments postponed resumption of school activities while waiting for a zero-case certification by World Health Organization (WHO). This may be connected with the high infectivity and case fatality rates in EVD epidemics, which could reach 80% to 90%.¹

The mode of transmission of these viruses is through close contact with blood and bodily fluids of those infected.^{2,3} Students on holidays were likely to have traveled to endemic areas and could have contacted the virus given that 18 cases were reported in various parts of Nigeria within the July to September 2014 holiday period. The resultant palpable fear, panic, and uncertainty when students came together when school resumed in October 2014 was reinforced by the realization that there is currently no known cure or treatment for the disease, amid high probability of infection from the infected to the noninfected on a high magnitude. However, indefinite

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closure of schools could put the future of the students in peril as many of them might not return and might eventually drop out of school. Whether or not to postpone the resumption of schools depended largely on the readiness of EVD prevention and control programs in the schools. This study assessed preparedness of schools in the north central region of Nigeria toward EVD prevention and control within 1 month of resumption of classes.

METHODS

Study Area

The study was carried out in north central region of Nigeria, comprising five states. Nigeria was certified EVD free by the WHO in late September 2014 after about 6 months of EVD outbreak that ravaged the country. Educational institutions postponed the resumption of schools after the holidays twice to allow for better preparedness and control of the disease. Schools included private or public, primary or secondary, or mixed (boys and girls) and stand-alone models.

Study Population

The study population consisted of all schools within the study area. Only schools registered and recognized by their respective state Ministries of Education were selected for this study.

Study Design

This was a descriptive cross-sectional study on preparedness for EVD prevention and control among selected schools in the north central region of Nigeria.

Sample Size Estimation

Using modified Leslie Fischer's formula for calculation of sample size for population <10,000 and prevalence figure of 0.5,⁴ a sample size of 72 schools was calculated, and this was increased to 80 schools to account for nonresponse.

Sampling Methods

A multistage sampling method was adopted in sample selection. In the first stage, 2 of 6 states in the region were selected using simple random sampling employing simple balloting, and these evolved Federal Capital Territory and Nassarawa states. In stage 2, half of local government areas (LGAs) per state were selected using simple random sampling employing simple balloting. A list of schools per LGAs were collected from the local education authority in stage 3, and 1 in 2 schools on the list were selected using systematic random sampling methods. These schools were visited to collect data on their preparedness for an EVD outbreak when schools are back in session.

Research Instruments

Research instruments included semi-structured, self-administered and pretested questionnaires prepared by

the headmaster, principal, or proprietor or the most senior academic staff (as applicable) in the school. Pre-testing was done among 5 schools in neighboring Kwara State, and the responses were used in questionnaire modification. Questionnaires were divided into 2 sections; the social characteristics of the school and the efforts, preparedness or readiness of the school regarding EVD prevention and control.

Ethical Approval

Approval to conduct this study was obtained from UNIOSUN health ethics committee. Further permission was obtained from the state Ministries of Education, local education authorities, and designated heads of selected schools.

Data Management

Questionnaires were manually sorted out, followed by data cleaning. Data were entered into the SPSS software version 17.0 after ensuring validity checks through double-entry, random checks and looking for outlier variables. Frequency tables and charts were generated including calculation of relevant summary indices. Readiness of schools was based on 11 effort-making questions on EVD prevention; such as ability to organize hand washing stand and session, buying hand sanitizers, making soap and water available, holding regular health education sessions on school grounds, taking daily temperatures using infrared thermometers.

A positive effort toward each of the 11 criteria was scored +1, whereas no effort was scored 0. Aggregated scores of 0 to 5 were categorized as (apparently) not ready, 6 to 8 as apparently ready, and 9 to 11 as very ready. Ultimately, aggregate scores of ≥ 6 were categorized as ready, whereas < 6 were categorized as not ready. Bivariate analysis of some variables in relation to the readiness of the schools was carried out in addition to some related binary logistic regression. $P < 0.05$ was considered statistically significant for all inferential statistics.

Study Limitations

Because the outbreak in Nigeria occurred within the period when the WHO considered declaring Nigeria EVD free, many schools did not want to volunteer information that would describe them as EVD prone because of stigmatization associated with the disease. This issue was handled by the persuasive nature of the data collectors and the assurance that all information would be kept strictly confidential.

FINDINGS

Thirty-two (42.1%) of the schools were <10 years old; 41 (53.9%) were privately owned; 16 (21.1%) were primary schools; and 60 (78.9%) were secondary. Sixty-seven (88.2%) schools were mixed-sex schools (Table 1).

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