

Cross- Sectional Survey Of School Teachers Knowledge Of Ebola Virus Diseases In Ilorin

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Abstract:

The current outbreak of Ebola virus disease (EVD) is the largest ever. It had led to major disruptions in academic calendars due to closing of schools. However, recent successes in curtailing the epidemic had led to the reopening of schools. School teachers who are in close contact with children should have the necessary knowledge regarding the disease and the capacity to carry out appropriate actions for ill children. We sought to determine the knowledge of primary and secondary school teachers in privately owned schools regarding EVD. The study is a descriptive questionnaire based survey on knowledge of teachers regarding EVD. Study participants were primary and secondary school teachers working in privately owned schools. A purposive sampling technique was used in selecting participants. One hundred questionnaires were distributed with an 89% response rate. The mean age of the teachers was 34.18 years \pm 8.49. Majority (87.6%) of the teachers recognized close contact with an infected person as a method of transmission. Most (68.5%) of the teachers were able to correctly identify six or more common symptoms of EVD. Over 70% of the teachers recognized the need to isolate suspected/confirmed cases, frequent hand washing the use of hand sanitizers as effective strategies for the prevention of EVD.

School teachers in the current study have a good knowledge of EVD and strategies for its prevention.

Keywords: Ebola virus disease; Teachers; Knowledge; Nigeria; Prevention

Introduction:

The current outbreak of Ebola virus disease (EVD) has been the largest ever recorded. World Health Organization estimates that by 23rd March 2015 there had been 24,842 suspected/confirmed cases in West Africa with 10,299 deaths (case fatality 41.5%). Children infected during Ebola outbreaks are generally few because of outbreak dynamics and societal structures. During the current outbreak, only 13.8% of cases were aged 15 years and below. Similarly, the Ebola outbreak in Zaire in 1995 resulted in 315 cases of which 9% were in children less than 18 years of age. Nevertheless, the 2014 outbreak resulted in closure of most schools in affected areas on account of fears of transmission within the school population. However, the waning epidemic led to increasing calls for schools to be reopened with governments ensuring the schools had put in place certain minimum requirements. United Nations Children's Fund, Centers for Disease Control and prevention and World Health Organization, amongst other bodies developed guidelines for reopening of schools containing key information and principles for reopening schools.

The School Health Program (SHP) provides a framework upon which staff of schools are expected to provide school health services, such as health problem identification, treatment of common ailments and injuries, monitoring for outbreaks and ensuring vaccinations as necessary, among others.⁶ Unfortunately, studies in Nigeria have documented the poor implementation of the SHP and as such, schools are largely unprepared to deal with disease outbreaks.^{7,8} A survey by Oyinlade et al⁹ demonstrated that most schools in Sagamu did not have qualified health personnel or staff trained in basic health care and none of the schools had areas for isolation of children with potentially transmissible infections. Sick children were taken home in the school bus or parents called to pick the child.⁹ Areas of congregation of people, such as schools have been recognized as fertile grounds for ready transmission of EVD.⁴ When coupled with the deplorable state of the SHP, there is potentially a significant increase in the risk of the disease spreading rapidly in school populations, if introduced. With the resumption of schools, it became critical to evaluate preparedness of school teachers, as frontline staff of schools, for EVD among staff and students. To the best of the authors' knowledge, no study has been conducted in Nigeria to examine this critical issue, made more important as the nation deploys multipronged

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strategies to address the current Ebola epidemic. Thus, we sought to determine the knowledge of school teachers regarding Ebola virus disease and its prevention in preparation for the reopening of schools following the outbreak in Nigeria.

Materials and methods:

The study was a descriptive cross-sectional survey of school teachers of privately owned primary and secondary schools in Ilorin (comprising of Ilorin West, Ilorin East and Ilorin South Local Government Areas). It was carried out in August 2014 as part of training for staff of private schools and the interviews were conducted before the training. The study population consisted of all teachers of privately owned primary and secondary schools from Ilorin city present at the training. There were 310 registered teachers from the study coverage area and using a 10% confidence interval and 95% confidence level the calculated minimum sample size was 74. Allowing for a 10% non-response rate, the calculated sample size was 81. A convenience sampling of the teachers was used to determine study participants and questionnaires were given to them as they walked into the hall. Approval for the study was obtained from the state ministry of education. Written informed consent was obtained from the teachers and those who agreed to participate were given the study instrument. A self-administered questionnaire was administered to the school teachers that contained basic demographic data, questions on knowledge of EVD, preparedness for school resumption considering the Ebola outbreak and practices regarding disease prevention in their institutions. The questionnaire was designed by the investigators and based on items as listed in the key messages for safe school operations in countries with outbreaks of Ebola. All questionnaires were retrieved before commencement of the training. Responses were coded and entered into a spread sheet. Each response regarding knowledge was categorized as correct or incorrect based on predetermined answers as determined by the study investigators.

Results:

One hundred questionnaires were distributed to the teachers. Eighty nine questionnaires were returned completed giving a response rate of 89%. Sociodemographic characteristics of the non-responders could not be obtained. Demographic characteristics of the respondents are summarized in Table 1. The mean (SD) age of the teachers was 34.18(8.49) with a range of 20-58 years. There were 55(63.2%) females and 32 males (gender not stated for two subjects). Majority (95.5%) of the teachers were of the Yoruba ethnic group. The highest educational qualification of the teachers was National College of Education certificate (41 teachers (46.1%)) and

Table 1: Demographic characteristics of teachers

| Characteristics | Frequency (%) n=89 |
|-----------------------------------|--------------------|
| Mean (SD) age, years | 34.18(8.49) |
| Age groups (years) | |
| - 20-29 | 33(37.1) |
| - 30-39 | 32(36.0) |
| - 40-49 | 17(19.1) |
| - >50 | 7 (7.9) |
| Sex* | |
| - Male | 32 (36.0) |
| - Female | 55 (61.8) |
| Location of school | |
| - Urban | 70 (78.7) |
| - Rural | 19 (21.3) |
| Highest educational qualification | |
| - NCE | 41(46.1) |
| - OND | 6 (6.7) |
| - HND | 11(13.6) |
| - B.Sc/ B.Ed/ B.A | 28(31.7) |
| - Others | 3 (3.4) |
| Ethnic group | |
| - Yoruba | 85(95.5) |
| - Igbo | 2 (2.2) |
| - Nupe | 1 (1.1) |
| - Tiv | 1 (1.1) |

* Two respondents did not indicate their sex

Table 2: Teacher responses on Ebola virus disease

| Response | Frequency (%) n=89 |
|---|--------------------|
| What causes EVD | |
| - Virus | 73 (82.0) |
| - Other responses(Bacteria, protozoa) | 16 (18.0) |
| Where did first ever case occur | |
| - Congo | 12(13.5) |
| - Guinea | 7 (7.9) |
| - Liberia | 23(25.8) |
| - Sierra Leone | 4 (4.5) |
| - Sudan | 35(39.3) |
| - No idea | 8 (9.0) |
| Methods of transmission* | |
| - Close contact with secretions | 78(87.6) |
| - Airborne | 35(39.3) |
| - Water borne | 21(23.6) |
| - Food borne | 9 (10.1) |
| - Mosquito bites | 13(14.6) |
| - Others | 9 (10.1) |
| Number of features correctly identified | |
| - <3 | 11(12.4) |
| - 3-5 | 21(23.6) |
| - 6-8 | 53(59.6) |
| - >8 | 4 (4.5) |

* Respondents were allowed to give more than one response

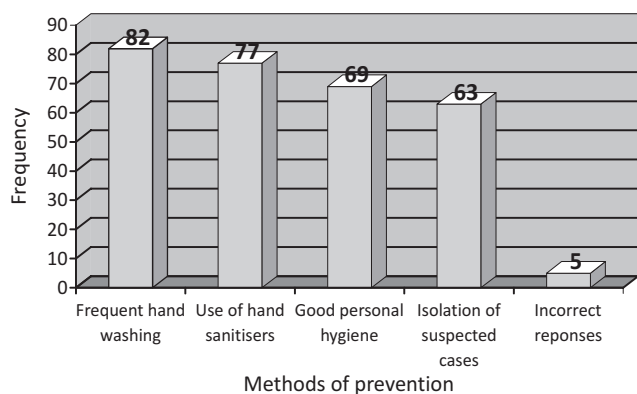


Figure 1: Responses regarding methods of prevention of EVD

Bachelor degree for 21 teachers (31.7%). Others are as shown in Table 1. Seventy of the teachers taught in urban communities.

Regarding the etiology of EVD, 82% of the teachers knew it was caused by a virus (Table 2). Only 35(39.3%) teachers knew the first reported outbreak of EVD was in Sudan. Other responses are as shown in Table 2. Regarding methods of transmission, 78 teachers (87.6%) identified close contact with an infected person as a method of transmission. Incorrect responses given regarding methods of transmission included breathing air in a room with an infected person (39.3%), water borne (23.6%), food borne (10.1%) and mosquito bites (14.6%) (Table 2). Of the 12 listed symptoms and signs of EVD, only 4 (4.5%) teachers were able to correctly identify greater than 8 features and 53(59.6%) identified between six and eight features. Others are listed in Table 2. Regarding effective ways of preventing EVD, 82(92.1%) teachers indicated frequent hand washing, 77(86.5%) teachers recommended use of hand sanitizers, 63(70.8%) teachers indicated isolating suspected/confirmed cases and 69(77.5%) teachers recommended good personal hygiene (Figure 1). Incorrect responses given included chewing kolanut (2 teachers), bathing with salt water (1 teacher) and avoiding public transportation (2 teachers). Teachers were asked about actions they routinely carry out whenever a child is ill or injured at school. The commonest response was to administer first aid (65 teachers (73.0%)). Forty one teachers (46.1%) would take the child to a clinic, 40 (44.9%) would call the parents, 24 (27.0%) would do nothing and watch for improvement, 16 (18.0%) will isolate the child from other children and 10 teachers (11.2%) would send the child home.

Discussion

The concept of the “safe schools” during outbreaks of EVD is relatively new to most parts of West Africa. The current outbreak has disrupted educational institutions with its attendant effects on development in Africa. The pressure for schools to reopen as the outbreaks wanes in various countries

means necessary strategies have to be put in place.

The School Health Program is pivotal and provides a readymade framework upon which disease prevention models can be built.⁶ Unfortunately, the SHP has been poorly implemented in most communities and as such, “ad hoc” measures have to be put in place urgently as an immediate strategy to deal with the current epidemic while the nation grapples with strengthening and ensuring functionality of the SHP. This forms the basis for the “safe school” training to handle the EVD epidemic.⁵ Teachers, by virtue of being in close contact with children in schools, have a key role to play in reducing the risk of transmission of EVD in schools. This is especially important as a lot of wrong messages driven by fear and panic are often spread during such outbreaks. Majority of the teachers in the study had correctly identified the cause of EVD, methods of transmission, common symptoms, signs and preventive strategies. Despite this, quite a number of these teachers also harbored wrong information such as air, water and food borne transmission, and transmission via mosquito bites. The concept of droplet transmission is often misunderstood by individuals to mean it can be transmitted by breathing the same air as someone with the disease. Training sessions and information booklets must underscore the distinction between the two. Hand washing and the use of hand sanitizers are effective strategies for preventing EVD. Their use is limited in most settings by the availability of running water, soap and the hand rubs. When children fall ill at school, teachers are expected to take necessary action to provide immediate care for the child and limit the spread of infections to other children. In the current study, only 18% of teachers would isolate an ill child from other children. This has enormous implications for the spread of several communicable diseases ranging from diarrheal disease, respiratory tract infections, viral exanthems and most definitely EVD.

The current EVD epidemic has further demonstrated the weakness of the SHP in Nigeria, and indeed most parts of Africa. The SHP has as one of its key components school health services which encapsulate the provision of preventive and curative services delivered within the school.⁶ Under the SHP, schools should have designated health staff (or teachers with training in delivering basic care), methods for screening for common diseases, facilities for temporary isolation and protocols for dealing with potentially infectious cases.⁶ Basic personal hygiene should also be taught to students and practiced by all.⁶ These measures, if well implemented, obviously will enable early identification of most disease conditions and limit spread within school facilities. Thus, there exists a dire need for resuscitation of the school health program in Nigeria so teachers are empowered with the knowledge and facilities to manage such situations

adequately. Governments in the region have a key role to play in ensuring schools meet with the required minimum standards routinely.

In conclusion, majority of the teachers in the study had good knowledge regarding EVD and common strategies for its prevention in the school environment and community.

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Conflict of interest

There are no conflicts of interest.

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