Original Article

Framework for a psychosocial support structure for individuals during an Ebola virus disease outbreak: Lessons from Port Harcourt experience

Chukwuma Ugochukwu Okeafor, Ibitein Ngowari Okeafor[1], Chidozie Donald Chukwujekwu

Department of Mental Health/Neuropsychiatry, University of Port Harcourt Teaching Hospital, Port Harcourt, [1]Nigeria Field Epidemiology and Laboratory Training Program, Nigeria

Abstract

Background: The Ebola virus epidemic was reported in Lagos, Nigeria, in July 2014; this further spread to Nigeria's Oil city of Port Harcourt in September 2014. Ebola virus disease (EVD) is highly infectious with high mortality rates reported. During such an outbreak, there is a tendency to neglect the psychosocial implications of this outbreak. This research sought to propose a psychosocial support framework during an EVD outbreak.

Methods: This study was a qualitative study. It employed review of literature, individual- and group-interview sessions and one of the author's (CUO) experience and challenges as the lead of the psychosocial support group (PSG) during the 2014 EVD outbreak in Port Harcourt to develop a framework on psychosocial support for EVD. Data presentation involved tables, charts and GIS map.

Results: There were a total of four cases of EVD and 526 contacts in the EVD outbreak in Port Harcourt. The framework comprises four components, namely PSG, set-up/location, protocol of care and services and mobility/other logistics. A multidisciplinary team comprising psychiatrists, clinical psychologists, mental health nurses, counsellors, social workers and religious carers makes up the PSG. Set-up/location refers to the PSG operation office. The protocol of care and services are the modalities of care related to the categories of individuals requiring psychosocial support in EVD response.

Conclusion: It is imperative that the psychosocial needs of individuals affected by EVD outbreak are sufficiently met. The psychosocial support framework provides a well-coordinated and structured approach in ensuring the holistic care of these individuals.

Keywords: Ebola virus disease outbreak, framework, Port Harcourt, psychosocial support

Address for correspondence: Dr. Ibitein Ngowari Okeafor, Nigeria Field Epidemiology and Laboratory Training Programme, 50 Haile Selassie Street, Asokoro, Abuja, FCT.
E-mail: eagleswatchresearch@gmail.com

Received: 26.11.2019, **Accepted:** 08.04.2020, **Published:** 07.09.2020

INTRODUCTION

The Ebola virus disease (EVD) outbreak was reported in Nigeria in July 2014 and this further spread to Nigeria's Oil city of Port Harcourt in August 2014. On the 26th of August 2014, the Rivers State Ministry of Health was alerted of a suspected death from EVD of a medical doctor in the state. The doctor was reported to have had contact with a primary contact of the index case of EVD in

Access this article online	
Quick Response Code:	Website: www.phmj.org
	DOI: 10.4103/phmj.phmj_25_19

How to cite this article: Okeafor CU, Okeafor IN, Chukwujekwu CD. Framework for a psychosocial support structure for individuals during an Ebola virus disease outbreak: Lessons from Port Harcourt experience. Port Harcourt Med J 2020;14:38-44.

Nigeria. The index case of EVD in the country was a male Liberian-American, who came into Lagos Nigeria, from Monrovia, on the 20th of July 2014. He had symptoms of fever and body weakness on arrival and was admitted in one of the hospitals in Lagos. He was further investigated and he tested positive to EVD. He died on the 25th of July 2014.

Noteworthy, one of the primary contacts of the index case of EVD in Nigeria was a 45 year old Economic Community of West African States diplomat, who was being monitored daily in Lagos. However, he escaped to Port Harcourt City in Rivers State on the 1st of August 2014. He was treated privately by the late medical doctor and returned back to Lagos after 4 days. The medical doctor became symptomatic 1 week after the treatment and died on the 22nd of August 2014. This prompted an immediate mobilisation of relevant stake holders and formation of Ebola Emergency Operation Centre (EEOC) in Rivers State. Organisations and partners which formed the EEOC included Rivers State Ministry of Health, World Health Organization (WHO), Medicines Sans Frontiers, United Nations Children's Fund, United States Centers for Disease Control and Prevention, Nigeria Centre for Disease Control, Nigerian Field Epidemiology and Laboratory Training Programme, Red Cross, Association of Public Health Physicians of Nigeria, etc. On October 20th of 2014, the WHO declared Nigeria Ebola free.[1]

The EVD outbreak response in Nigeria anchored on the Emergency Operations Centre (EOC). The EOC was based on the Incident Management System to coordinate a timely and effective response. It was led by the Incident Manager and six response teams specific to Ebola response were constituted.[2] These teams are Epidemiology/Surveillance, Case Management/Infection Control, Social Mobilization, Laboratory Services, Point of Entry and Management/Coordination. Each of these teams had sub-groups to promote efficiency. The psychosocial support group (PSG) worked under the Case management/infection control team.

Emergencies pose a stress to those affected; however, with EVD outbreak, there are specific sources of stressors related to it.[3] These stressors include physical isolation, pressure of the strict procedures to follow, burn-out syndrome, the risk of being contaminated and contaminating others, the fear of being infected since developing common symptoms like fever could be mistaken as Ebola, the fear of death due to the high mortality rate of disease, abandonment of patients by family, resistance of the community to health authorities on burial rites during EVD outbreak.[4,5] These stressors actually arise from the already known facts associated with the Ebola virus transmission, prevention and treatment.[6] Stressors are not limited to EVD patients and their families alone but also staff and volunteers caring for EVD patients.[7] These stressors could lead to mild to severe psychological problems. The latter, when not properly managed, hamper on the success of EVD case management and infection control. Consequently, worsening the spread of the EVD epidemic.

Psychosocial well-being has been identified as being essential in EVD management for recovery of individuals, community development and long-term resilience at community and national levels.[8] The magnitude of an EVD outbreak requires that a proper psychosocial support mechanism is in place in order to enable individuals adversely affected to attain and maintain optimal psychosocial well-being.[7]

The stigma and discrimination of EVD survivors as well as family members who have lost loved ones to Ebola virus is prevalent.[6] However, it has been reported that much worse than the stigma is the complex relationship difficulties such as interpersonal conflicts.[8] The latter occurs from scenarios like, blaming a friend or neighbor for reporting suspected cases of Ebola or even blaming a family member for bringing the virus to the community. The breakdown of such relationships pose a severe psychological distress, requiring a holistic psychosocial approach.

Furthermore, the high infectiousness and significant mortality of 70%–90% of EVD breed features of fear, anxiety, stigmatisation and denial.[9] Obviously, these features impact negatively on the mental health of individuals and impede full recovery during EVD outbreak. Thus, to counteract these effects and other several stressors related specifically to Ebola outbreak, a well packaged and complete psychosocial care is vital.[4] The provision of psychosocial support promotes the compliance of the affected individuals to positive attitudes towards the containment of the outbreak.[10,11] Noteworthy, in EVD outbreak, surveillance activities and treatment of the affected are crucial but must be complemented by mental and social interventions.[7,12] Thus this study sought to address the psychosocial support needs during an EVD outbreak by presenting a framework to ensure a holistic approach to offering psychosocial services to all individuals affected by the EVD outbreak.

METHODS

Study area

The study was conducted in Port-Harcourt, the capital city of Rivers State. Rivers State is in the south-south geopolitical zone of Nigeria. The State has twenty three

local government areas (LGAs) and is situated in the tropical rainforest belt of Nigeria. The state has a total population of about 5.19 million from 2006 census, making it the sixth most populous state in Nigeria.[13] Port Harcourt is a cosmopolitan city with sea ports, an international airport and other large, medium and small scale industries.

Study design

This study was a qualitative study that employed review of literature, individual- and group-interview sessions to establish a framework on psychosocial support. The experience of one of the author's (CUO) as the lead of the PSG in the 2014 EVD outbreak in Port Harcourt also enriched the concepts of the Framework.

Study population

Persons affected by EVD in Port Harcourt comprised the study population. EVD cases, contacts as well as their family members who required psychosocial support were included.

Ebola virus disease case definitions

Suspect case

A suspect case of EVD was defined as any person residing in Port-Harcourt within the past 1 month of the outbreak who presented with fever and vomiting or diarrhoea or bleeding (from stool or mucous membranes); or two of the following: headaches, myalgias, arthralgias, weakness and low-level exposure in the past 3 weeks. Low-level exposure refers to being in an affected area within the past 3 weeks or having contact with an ill individual who has visited an affected area within 3 weeks of becoming ill; or any person in Port-Harcourt with fever and high-level exposure in the past 3 weeks. High-level exposure refers to close contact with a confirmed case of EVD or close contact with a person who had visited an affected area within 3 weeks of becoming ill and who died either from a febrile illness or from an unexplained cause, participated in a funeral service within 3 weeks of becoming febrile where the funeral was held in an affected area; or the decedent had been in an affected within 3 weeks of becoming ill.

Probable case

A probable case was defined as any person suspected to have EVD who has an epidemiological link to a person with a confirmed case or any person who died from suspected Ebola and but was not tested and did not have laboratory confirmation of the disease.

Confirmed case

A confirmed case of EVD is a suspect or probable case with laboratory confirmed diagnostic evidence of EVD.

Ebola virus disease contact definition

An EVD contact is a person without any disease signs and symptoms but had physical contact with a case (alive or dead) or the body fluids of a case within the last 3 weeks. Physical contact includes sharing the same room/bed, caring for a patient, touching body fluids or closely participating in a burial. Contacts are classified into 4 main types;

Type 1 - Contacts who touched body fluids of a case;
Type 2 - Direct physical contact with a case (dead or alive);
Type 3 - Manipulation of clothes or other objects of a case;
Type 4 - Contacts in the same room or house with case.

Subject recruitment

The PSG, a sub-set of case management team was consulted to offer psychosocial assessment and support to EVD cases, contacts and family members during the outbreak.

Data collection

The demographic and clinical information on EVD cases were obtained from case management, while that of EVD contacts were obtained from the epidemiology and surveillance group.

Qualitative data obtained were from interview sessions, which involved several psychological and health education methods, comprising of motivational talk, psychotherapy, cognitive therapy, general psychoeducation and counselling, social reintegration and community sensitisation.

Data analysis

Descriptive data of EVD outbreak were presented using tables, charts and GIS map. The qualitative data obtained from the study was used in establishing a psychosocial support framework, which is the crux of the study. The elements of the Framework were depicted using diagrams.

Ethical consideration

Informed consent was obtained from all cases and contacts and they were assured that data obtained will be kept confidential. Anonymity was maintained using initials and serial numbers to protect identify of affected individuals.

RESULTS

Ebola virus disease cases and contacts

Table 1 provides a summary of EVD cases and contacts. There were a total of four cases of EVD in Port-Harcourt. All the cases occurred among residents of Obio-Akpor LGA which has an estimated population of 535,800[13] resulting in an Attack rate of 7.5/1,000,000 persons. A total of

Table 1: Summary of cases and contacts of Ebola virus disease outbreak in Port-Harcourt, September 2014

	Cases/contacts	Total
1	Cumulative number of cases	4
2	Total Suspects discarded	8
3	Cumulative number of deaths	
	Suspect - 0	2
	Probable - 1	
	Confirmed - 1	
4	Health worker death	1
5	Nonhealth workers death	1
6	Total contacts registered	526
7	Contacts who completed 21-day follow-up	498

526 contacts were followed up, out of which 28 (5.3%) were lost to follow-up. Eight (1.5%) contacts developed symptoms with elevated temperatures, but tested negative to EVD.

Figure 1 shows the chain of transmission of EVD in Port Harcourt. The index case was a 42-year-old male medical officer, married with one child. Case 2 was a 33-year-old wife of the index case. She had a live birth 3 weeks prior to onset of symptoms. Case 3 was a 62-year-old woman, nosocomially infected, who had a cardiac disease and was hospitalised in the same ward as index case. Case 4 was a 27-year-old female student and sister of index case. She nursed index case during the period of illness in the hospital.

Figure 2 shows the spot map of EVD cases and contacts. All 4 (100%) cases reside in Obio-Akpor LGA while majority (77.6%) of the contacts reside in Obio-Akpor and Port Harcourt LGAs of Rivers State, with very few contacts spread across neighboring LGAs of Ikwere, Emuoha and Asari-Toru.

Figure 3 shows the types of EVD contact and place of exposure. Type 4 contact was the most common type of contact in all the places of exposure. Nearly half 246 (46.8%) of all the contacts were exposed in health facilities. Most Type 1 contacts 10 (71.4%) occurred in the health facility, while the church had the highest number 71 (53.8%) of Type 2 contacts.

Interview sessions

There were a total of 45 interview sessions involving EVD cases, contacts, family members of EVD cases, staff and management of hospitals affected by EVD outbreak, staff/volunteer of EVD treatment centre, members in churches affected by EVD outbreak, community chiefs and members in EVD affected localities.

Psychosocial framework

The framework has the following components as shown in Figure 4.

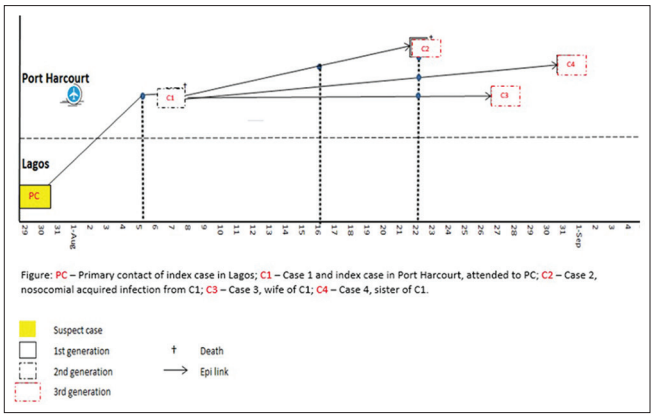

Figure: PC – Primary contact of index case in Lagos; C1 – Case 1 and index case in Port Harcourt, attended to PC; C2 – Case 2, nosocomial acquired infection from C1; C3 – Case 3, wife of C1; C4 – Case 4, sister of C1.

Figure 1: Chain of transmission of Ebola virus disease with last date of contact, Port-Harcourt, Rivers State, September 2014

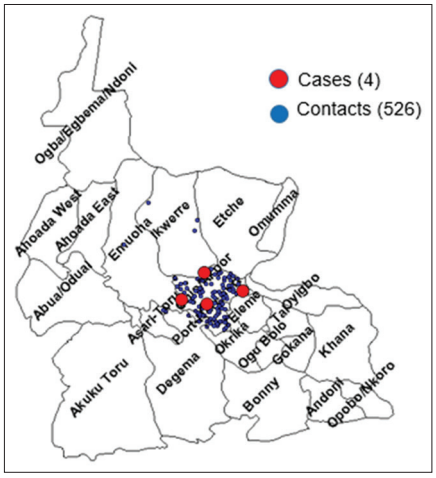

Figure 2: Spot map showing distribution of Ebola virus disease cases and contacts by local government area in Rivers State, September 2014

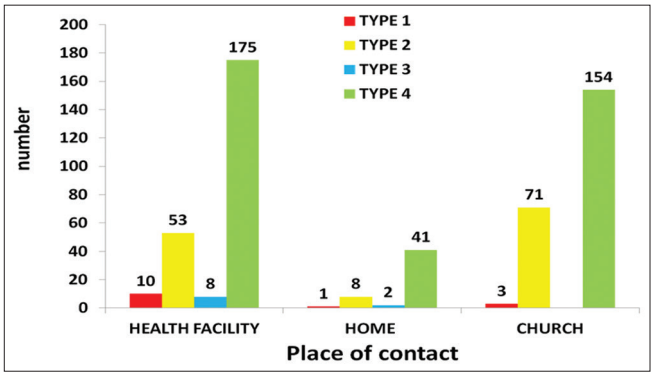

Figure 3: Place of exposure by type of contact in Port-Harcourt Nigeria, September 2014

a. Psychosocial support team/group
b. Set-up/location
c. Protocol of care and
d. Logistics/Mobility components.

The PSG is a multidisciplinary team that has the capacity to inculcate psychiatrists, clinical psychologists, mental

health nurses, counsellors, social workers and religious carers.

Set-up/location component of the framework refers to the operational base office.

The protocol of care and services refers to the modalities of care granted to the categories of individuals requiring psychosocial support in EVD response, modes of attention to individuals and the reporting templates. The individuals requiring psychosocial support are classified into four categories;

i. Person(s) with EVD (PEVD)
ii. Family members of person(s) with EVD (FEVD)
iii. Contacts of EVD on tracing list (CEVD) and
iv. Staff/volunteers of the EOC and treatment unit for EVD (SEOC).

The PEVD category is not limited to confirmed cases of EVD, it also covers suspect and probable cases of EVD. The modes of attention to individuals include visitations of PSG to EVD treatment centres and homes, visitation by the clients to PSG operation office, Telephone/Internet voice conversation and Tele/video-conference.

Also, in the protocol of care is the reporting template. Two reporting templates were designed; one for the referral of individuals to PSG for evaluation [Figure 5] and the other, is the PSG reporting activity log [Figure 6]. For instance, if a staff of the Epidemiology/Surveillance team on EVD contact tracing suspects a contact needs psychosocial care, such staff refers to PSG using the referral form. The PSG reporting activity log helps to track activities being carried out by the team. The services being offered by the PSG were categorised as immediate/short-term services and long-term services. The psychosocial services rendered include full mental health assessment, supportive psychotherapy, motivational therapy, cognitive behavioural therapy, comprehensive social assessment, social interventions, etc. Table 2 shows the services offered based on the categories of individuals affected by EVD.

The Mobility and other logistics component involves the provision of appropriate transportation and other resources required by the group to ensure optimal performance.

DISCUSSION

The framework ensures a holistic approach to psychosocial support in EVD outbreak. The first component of the framework being the constitution of a multidisciplinary team, referred to as the PSG, is necessary as human

Figure 4: Framework for psychosocial support structure for Ebola virus disease response

s/no	FIRST NAME AND INITIAL OF SURNAME	AGE	SEX	CONTACT POINT OR ADDRESS WITH LANDMARK	CATEGORY OF PERSONS				PURPOSE OF REFFERAL AND/OR COMMENTS
					PEVD	CEVD	FEVD	SEOC	

PEVD: Persons with Ebola Virus Disease
CEVD: Contacts of Ebola Virus Disease on tracing list
FEVD: Family member(s) of persons with Ebola Virus Disease
SEOC: Staff/volunteers of the emergency operations centre/ treatment centre for Ebola

Figure 5: Template for the referral of individuals to the psychosocial support group

s/no	CODED IDENTITY	CATEGORY OF PERSON	ACTIVITY	COMMENT

Figure 6: Template for psychosocial group activity log

resources remains the most important of all resources especially in health-care settings. The multidisciplinary nature of the team ensures the achievement of a comprehensive psychosocial support to the individuals affected by the EVD outbreak.[7] Noteworthy, for any team to achieve set goals and objectives and yield excellent outputs, team building skills, competence and commitment needs to be paramount among the members. The inclusion of religious carers in the team is vital as

Table 2: Psychosocial support services according to the categories of individuals affected by Ebola virus disease

Categories of individuals requiring psychosocial support in EVD outbreak	Psychosocial support services	
	Immediate/short-term services	Long-term services
PEVD	Full mental health assessment Daily or alternate day therapies at designated time of the day/as required Psychoeducation Supportive psychotherapy Motivational therapy Cognitive behavioural therapy etc. Comprehensive social assessment Social intervention Render advice to case management team on emergency interventions in case the need arises e.g., severe uncontrollable agitation	Supervise and coordinate the establishment of ES-G Offer group and individual therapy during ES-G meetings Long-term wholesome mental health follow-up Regular review of social status Further social intervention if required
FEVD	General psychoeducation Supportive psychotherapy Family therapy Comprehensive social assessment Social intervention Full mental health assessment and intervention for FEVD with major psychological issues	Supervise and coordinate the establishment of FES-G Offer group and individual therapy during FES-G meetings
CEVD	Train and advice contact tracers on identification of some major mental illness requiring the attention of PSG Attend to CEVD identified by contact tracers requiring psychosocial care via full mental health assessment, etc.	Further social intervention(s) if required
SEOC	Interpersonal therapy to maintain good working relationships Comprehensive social assessment Social intervention, etc.	Further social intervention if required

EVD: Ebola virus disease, PEVD: Persons with EVD, FES-G: Family of EVD support group, PSG: Psychosocial support group, EOC: Emergency Operation Centre, ES-G: Ebola survivors support group, FEVD: Family members of persons with EVD, SEOC: Staff/volunteer of EOC/treatment centres, CEVD: Contacts of persons with EVD on contact tracing

studies have shown that religious/faith based leaders play a vital role in curtailing EVD outbreak.[14,15] The inclusion of religious/faith based leaders in the EVD psychosocial support team in Port Harcourt assisted in ensuring that their religious/faith based members requiring psychosocial support complied with the treatment and these leaders were also used to offer hope to them. Also, from our experience, we observed that being a multidisciplinary team with clearly defined goals, job description, lines of action and a reporting organogram, we were able to seamlessly handle the issues stemming from the forming and storming transition stages of team building.

The protocol of care in the framework being stratified into PEVD, FEVD, CEVD and SEOC is in cognisance of the psychosocial needs of each category. It is also needed for ease of follow-up of care, proper documentation and holistic care. The use of reporting templates in the protocol of care allows for quality assessment and promotion of best practices in psychosocial support management. Although, a reporting template in emergency situations such as EVD outbreak may seem to be a bottle-neck, the importance of basic documentation in health care cannot be overemphasised. Nonetheless, the reporting template in the Framework is simple and can be easily filled.

The presence of an operation base office provides a platform for Tele/Video-therapy. This serves as a call centre for offering psychosocial support. The Tele/Video-therapy provides a near excellent form of audio-visual communication between the members of PSG and the EVD patients. It involves the installation of high definition smart TV at PSG operational office and in the EVD patient's room in the treatment centres. The presence of internet and other information communication technology equipment are also needed to facilitate communication. The mobility and other logistics component of the framework ensures the smooth running of the activities of the psychosocial group. It is also relevant for proper accountability and efficient use of resources. Mobility and logistics should not be undermined as delays in offering psychosocial support services could occur due to sub-optimal mobility and logistics.

Although, this framework on psychosocial support was established based on EVD, it can be applied to other viral haemorrhagic fevers such as Monkey pox virus. Unfortunately, during the Monkey pox outbreak in Bayelsa State, Nigeria, a case of suicide occurred among one of the cases in isolation.[16] This virtually highlights the importance of the establishment of a psychosocial framework in order

to cater for the psychological needs of those affected by the outbreak.

To the best of the authors' knowledge, this framework on psychosocial support during EVD outbreak is novel. It serves as a tool for the achievement of comprehensive psychosocial care in EVD outbreak. The research did not assess end-user satisfaction of psychosocial support service rendered, with end-users being the EVD cases, contacts, families affected by EVD and staff/volunteers of EOC who received psychosocial support. Thus, we recommend that this be included in further studies.

CONCLUSION

The psychosocial burden of an outbreak of EVD is potentially huge. This framework therefore serves as a means to ensure that all individuals affected by EVD receive optimal and timely psychosocial care based on their peculiar category.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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