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Effectiveness of the medical response teams to the 2014 Ebola outbreak: African immigrants' perceptions

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During the 2014 Ebola virus outbreak, international medical response teams were sent to help contain the virus. The purpose of this study was to explore the effectiveness of the medical response teams from African immigrants' perspectives. Qualitative data was gathered through the use of a semi-structured interview guide. Participants included thirteen African immigrants, ages 18 and above living in California. The data was analyzed using content and thematic analysis, organized into reoccurring themes, and categorized prior to analysis. The transcribed interviews were coded manually. Majority of the participants were females (69%), between 18 and 34 years old (77%) with post-graduate degree (62%). The participants stated that response to the Ebola outbreak did not match the need and that the response teams were slow to mobilize and were ineffective. About half of the participants (54%) stated that response teams were effective in their approach to curbing the outbreak but could have done a better job educating the general public about the disease. Collaborative efforts are needed to combat the global threat of an Ebola pandemic. Further research focusing on best approaches to educating the general public during an outbreak and an articulated mobilization of international aids may assist this collaborative effort in the U.S. and beyond.

Key word: Ebola virus, international aids, outbreak, pandemic, global threat.

INTRODUCTION

According to the Pew Research Center, African immigrants' population in the U.S. continues to grow steadily, doubling every 10 years since 1970 (Anderson, 2017). Although this group makes up a small percentage of the total U.S. immigrant populations, due to the consistent immigration growth rate of this group, their total U.S. population increased from 881,000 in 2000 to 2.1 million in 2015, representing a 41% increase during that time period, and quite a large increase from just 80,000 in 1970 (Anderson, 2017). With such growth

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among this population in the U.S., it makes sense that some individuals in West African countries affected by the recent Ebola outbreak attempted to come to the U.S. for treatment, with one individual from Liberia successfully entering the U.S. before being identified as a positive case on September 30, 2014 (WHO, 2020).

The first outbreak of Ebola virus disease took place in the Democratic Republic of Congo in 1976 where 318 cases were confirmed with 280 deaths (CDC, 2018; WHO, 2018). There have been numerous reports of Ebola virus in various parts of the world including Uganda, but the 2014 Ebola outbreak was the largest in human's history. The virus affected multiple countries in West Africa, specifically Nigeria, Mali, Senegal, Liberia, Guinea, and Sierra Leon (CDC, 2019; WHO, 2019a), with Guinea, Liberia, and Sierra Leon reporting the highest cases. There were also some reports of the virus being carried by infected individuals into developed countries such as the U.S., U.K., Spain, and Italy (CDC, 2019; WHO, 2019a). A total of 28,638 cases were reported from 2014-2016 (that is, suspected, probable, and confirmed) (CDC, 2019; WHO, 2019a) with 11,325 deaths, mostly in Guinea, Liberia, and Sierra Leone and one death in the U.S. (CDC, 2017).

Affected countries were overwhelmed with the outbreak due to lack of resources and proper training for medical staff. Illiteracy and cultural beliefs that the disease was due to witchcraft and that Westerners brought the disease further added to the challenge. In addition, there was no comprehensive response system in place to fight diseases like Ebola and/or control for large-scale outbreaks (Bell et al., 2016). The U.S and other countries deployed teams of public health experts to affected countries (CDC, 2019) to assist with treatment of infected cases and contain the spread of the virus. Some infected individuals tried to access treatment for the virus by going to neighboring countries (Bell et al., 2016), which added to the spread of the virus.

There has been limited research regarding the perceptions of African immigrants about the response to the Ebola outbreak. While many countries, including the U.S., rallied behind Ebola affected areas by sending forth medical response teams, it is unclear how African immigrants perceived the effectiveness of the resources and support that were provided. Having a strong perspective on this issue from those who have emigrated from Ebola affected areas, would allow those in the medical and public health fields to identify potential areas of improvement in order to bolster response efforts in future situations. Their unique perspectives may also accentuate the urgency in identifying potential prevention strategies alongside more efficacious treatment and therapeutics. Therefore, more research is needed in this area. As such, an exploratory study was completed with the use of in-depth interviews among African immigrants to understand participants' perceptions of the Ebola outbreak and related response efforts.

METHODOLOGY

Study site and participants

This qualitative study was conducted with a purposive sample of thirteen African immigrants in California. The study population consisted of men and women aged 18 and above. Participants were recruited from African/Black Churches, local community centers and organizations, cultural events and festivals, African restaurants, ethnic grocery stores, and beauty salons. Advertisement was done via posters, flyers, and word of mouth.

Participants were interviewed using open-ended structured questions using a one-on-one approach. The interview took approximately 30-40 min for each person to complete. Questions included were about their knowledge of Ebola, media sources where they received Ebola information from, their knowledge of the 2014 Ebola outbreak, their perceptions of the medical response teams, their perceptions of how the medical team handled the outbreak, and potential affects within the African community. Potential participants were solicited for the study during an encounter with the research team. After recruitment, participants were informed that their participation in the study was voluntary and told that refusal to participate would not affect their relationship with the African community/organizations they belong to. Participants who agreed to take part in the study were offered written and verbal informed consent. The California Baptist University Institutional Review Board (IRB) approved the study (Protocol number 15-ER-031).

Data collection and materials

The research group consisted of three experienced researchers and three trained research assistants. Training on how to conduct interviews was provided to all facilitators, including appropriate protocols for collecting data and obtaining informed consent from participants. The semi-structured interview questions followed these criteria: (a) media outlets used to get information on Ebola, (b) cultural beliefs/barriers, (c) knowledge of Ebola, and (d) effectiveness of medical response teams. Interviews were conducted at places convenient for each participant. Some were interviewed at their homes, others at cultural events, and place of worship. All interviews were completed in English from October 2015-August 2016. Each interview was audio-recorded using a digital recorder, and then transcribed verbatim by a research assistant who had not participated in the interview process. Transcripts were rechecked for accuracy by the lead researcher and a trained research assistant.

Data analysis

The data were summarized with descriptive text-based summaries and data display matrices (Miles et al., 1994; Williamson and Long, 2005). Verbatim quotes were selected to illustrate key findings, themes, and codes. Grounded theory approach was used for analysis. Open and closed coding was used to identify segments that were used to create themes for thematic analysis. Open coding is the process of picking out segments of data that are similar across interviews and relevant to answering the research questions. Close coding is the process of examining the selected

segments again across interview to develop themes from them. In the coding deductive coding (that is, codes grounded in theory) was used, which were drawn from the interview guide and research questions (Thomas, 2006). Afterward, inductive coding, which allowed identifying patterns in the interviews was used; then categories were established to identify additional themes, patterns, and categories that emerged from the data (Holloway, 1997). Deductive coding is the use of theoretical framework to corroborate or refute ideas, while inductive coding uses data to generate ideas (Thomas, 2006). Participants with missing demographic data were excluded from analysis.

RESULTS

Characteristics of the participants are summarized in Table 1. Thirteen African immigrants (9 females and 4 males) were included in the study. A majority of the interviewees (77%) were between the ages of 18-34 and 69% identified as female. Eight (62%) interviewees had postgraduate education, with four identifying as students and 9 identifying as Christians (excluding Catholic). Nine identified as Nigerians, with four stating they last visited their country of birth in 2015.

Several themes emerged during the interviews: The themes included (a) readiness/training of the medical response teams, (b) handling of the outbreak by the response teams (locally, nationally, and globally), (c) level of communication, and (d) effectiveness of the response and communication efforts.

Readiness/training of medical response teams

When participants were asked, if the medical response teams were well equipped and trained to handle the outbreak, the researchers received mixed information. Some interviewees felt response teams were unprepared and understaffed, while others said response teams were well equipped. The following quotes illustrate participants' perceptions concerning the readiness of response teams to handle the outbreak: *"The teams showed a high level of unpreparedness and it was not taken too seriously on the global level. The government and the international communities were slowed to response to the crisis, the medical teams were understaffed, unprepared, and the communications level was poor."* Some participants stated that the lack of proper training on the local and national levels was responsible for the increase in transmission. *"Not being well equipped or trained for the situation is why the outbreak reached the level it did… the countries have not dealt with situations of that magnitude. Lack of proper training caused more transmission of the disease."* One interviewee stated, *"One can never be prepared enough for something like that."* Some interviewees believed the global response teams were more prepared than local response teams. For example, *"The locals were not well equipped, but the international organizations were well prepared."* Another interviewee stated, *"The global response team had decent training, many countries have dealt with outbreaks such as the black plague, HIV/AIDS, bird flu, swine flu, which gave them time and better preparations to deal with the Ebola outbreak even though it was on different magnitude."*

Handling of outbreak by response teams

When asked if the medical response teams responded appropriately, some of the interviewees stated that responses could have been better. Some believed that not enough was done to garner global attention. Additionally, some of the participants stated the response was slow. For example, *"The government response was slow, and the international response was also slow. The medical team believed the locals were being intentionally hostile when they were just worried."* Another interviewee stated, *"There was too much fear, too little information given."* One participant believed preparations for treatment of the disease was not consistent, *"The preparations of protective outfits to wear during the giving of care was not consistent."* When asked about how the outbreak was handled on the local, national, and global levels, participants stated, *"On the local level, the people were not well informed about the disease and how it is spread. Due to traditions, customs, and beliefs, many locals thought the disease was made up in order to recolonize Africa, and some outrightly denied its existence. The government at the local level should have made an aggressive campaign informing people about the dangers presented by the disease/virus. Nationally, the government did not do enough to garner the world's attention and help. It was after people were dying in hundreds, did a relief efforts in Liberia eventually called out to the U.N….Globally, the first set of trial drugs were not even tested on the locals, but on the Western doctors who also contract the virus. At some point, medical personnel were running out of gloves. This displayed the priority level the U.N. places on Africa."* Another interviewee stated, *"The response was poor and containment efforts took too long, more resources could have been allocated and the global community didn't give enough support, the outbreak could have been handled more rapidly, the medical teams should have been able to contain the situation faster."* Some participants stated that on the local level, the response was vague and distant while on the national level it was fair and average. On the global level however, the interviewee stated the response was poor. The following quotes illustrate participants' perception thereof: *"The response was poor because the U.S. was more concerned about not letting the disease travel to the U.S. Global organizations dismissed Ebola until it was too late."* In terms of handling

Table 1. Participants Characteristics (N= 13).

Parameter	N	%
Gender		
Female	9	69.2
Male	4	30.8
Age group		
18-34 years	10	76.9
35-54 years	3	23.1
Education		
College Graduate	4	30.8
Graduate Education	1	7.7
Post-graduate	8	61.5
Occupation		
Accountant	1	8.3
Labor worker	1	8.3
College professor	1	8.3
Research assistant	1	8.3
Respiratory therapy	1	8.3
Student	4	33.3
Assistant manager	1	8.3
Unemployed	1	8.3
Nurse	1	8.3
		8.3
Religion		
Protestant	2	18.2
Muslim	1	9.1
Catholic	1	9.1
Pentecostal	3	27.3
Other Christian	4	36.4
Country of origin		
Cameroon	1	9.1
Liberia	1	9.1
Nigeria	9	81.8
Year last visited home country		
1989	1	9.1
1995	1	9.1
1999	1	9.1
2003	1	9.1
2010	1	9.1
2011	1	9.1
2015	4	36.4
2016	1	9.1

of the outbreak on the local level, one interviewee stated, *"The government downplayed the impact of Ebola while local's customs toward burial and handling of dead bodies contributed to the spread of the disease."* While other participants believed the international response teams did what they could to help:

"The global teams did not get enough support, but they did everything they could. They provided great help and knowledge. Appropriate measures were taken to prevent the disease from spreading."

Level of communication

When asked about their perception of the communication from response teams to the public, many participants stated that response teams communicated poorly. They felt that not only was there a lack of good communication between the response teams and the locals, but that lack of communication added to the spread of misinformation among locals. The following quotes illustrate these perspectives: *"The response teams spread more panic among the public than communicate appropriate information."* One participant stated, *"The communication was poor. Information given by the response teams was not well distributed. The locals thought the disease was propaganda because there they did not trust the response teams…had the response teams provided more information on the disease to the public from the beginning, it would have gotten the response team's better trust from the locals, which would have eliminated the propaganda."* Another participant stated, *"There was some lack in the communication from the response team to the public, but it could have been because of language barrier. The level of communication was understandably poor with the lack of infrastructure and resources."* Some participants believed that media added to the poor communication, *"The communication was poor especially via social media. The media exaggerated the news about what was happening in countries affected by the virus."* Some of the participants however, believed that the communication was appropriate, *"The communication was good, although there was misinformation at the early stage of the outbreak, and the response teams gave a true account of what was going on ground. I will say they did the best they could to communicate to the public, they gave better detailed information on what was going on."*

Effectiveness of response teams

When asked about the effectiveness of the medical response teams, some interviewees believed the teams were somewhat effective, while others believed they did the best under the given circumstance. The following quotes illustrate these perspectives: *"The U.S. social mobilization team was not effective at all; they could have done a better job. The response teams were not very effective in stopping the outbreak, they were incredibly slow to mobilize and they did not provide enough aide or understanding to the locals instead, they instilled fear in people, and gave misinformation to the public."* Some participants however, stated the teams were effective. For example, *"They were quite effective in helping to stop the spread of the outbreak and provide medical treatments to those infected. They did a good job in improving the outbreak by communicating the outbreak to the public and educating them."* One interviewee thought though effective, the communication could have been better, stating: *"They were effective but could have addressed the initial outbreak in long term prevention, but the U.S. was effective in social mobilization efforts and caused fear in the locals."* Other interviewees stated that response teams were effective in stopping disease spread, *"They were effective in stopping the spread of the virus."* One participant stated, *"They were quite effective in helping to stop the spread of the outbreak and provide medical relief to those suffering, with international support, Ebola spread was halted."*

In terms of social mobilization, *"They waited last minutes to react to the outbreak. I believe that the U.S. had prior knowledge about the disease yet waited until the outbreak reached the levels it did before they involved themselves. The social mobilization led to stigmatization of some African immigrants. Social mobilization should be done objectively."* Another participant stated, *"They were able to reduce mortality rate and eventually stopped the spread. The U.S. social mobilization effort was good. They did an amazing job in enlightening the public about the disease coupled with the non-stop media coverage by the American media."* One interviewee believed the mobilization served to educate locals, *"They did a good job in improving the outbreak by community outreach and educating the public. They provided education to all the hospitals and local health centers."*

DISCUSSION

Understanding of the effectiveness of the medical response teams to the Ebola outbreak would better prepare social mobilization teams for future outbreaks globally. This study highlights important insights from different African immigrants on the effectiveness of international aids in West Africa during the recent Ebola outbreak. All participants identified barriers they believed to be contributing factors regarding medical and public health responses to the 2014 Ebola outbreak in West Africa. The implications of these findings must therefore be considered when developing effective multi-approach strategies for handling future outbreaks.

In the interviews with African immigrants, it is clear that they are pleased with some of the Ebola efforts; yet they feel as if they are at a standstill in the overall response. When one's family member is in danger, it is difficult to sit back and do nothing. They understood the dangers but felt somewhat helpless in the coordinated responses.

According to the few pieces of information available, many African immigrants are concerned with what they can do for their loved ones still living in Ebola affected areas. In one study, a young immigrant emphasized a substantial need towards groups going out and bringing supplies into the affected areas (Rector and Dance, 2013). A common collective goal is to ensure that their loved ones are getting what they need to remain healthy. Because numerous places shut down due to outbreaks, immigrants feel that it is their responsibility to then provide resources accordingly. They feel the need to provide whatever supplies are needed to protect their loved ones. Receiving monetary support or various other supplies often allows those living within affected areas to sustain hope. African immigrants have also encouraged governments and organizations to assist and support their home countries.

Approaches to improve the effectiveness of response and communication

Medical response teams have worked towards implementing safer and more realistic protocols to respond better towards future Ebola outbreaks. Their ability to be forward-thinking and create a resourceful form of disease control for locals has been deemed vital, in hopes that awareness will increase not only emergency teams, but to garner increased support and recognition worldwide (National Academies of Sciences, 2016). Creating a plan that allows medical teams to mobilize with a more comprehensive understanding regarding the importance of preventative and emergency social teams amidst another global outbreak, will enhance recognition and hopefully provide help to those most in need, at a faster rate, which is something some of the African immigrants interviewed felt was lacking during the 2014 Ebola outbreak.

The effectiveness of immediate medical response teams comes in a multipronged approach to any intervention to better contain the Ebola virus. Emergency Epidemiologist Armand Sprecher stated that a community that carries out health promotion campaigns to try to change community infection behaviors and interrupt disease transmission within health care facilities, can potentially reinforce infection control and prevent transmission within health structures (National Academies of Sciences, 2016). Thus, an effective way in highlighting the emergence of medical response teams is to educate them on the surrounding communities and work diligently towards infection and outbreak control through strategies like contact tracing, a straight-forward way to respond to the spread and attempt local prevention. As mentioned by some of the interviewees, had the medical response teams been better educated about the communities and cultures they were going into, it would have helped in their fight against the outbreak. In the Center for Disease Control and Prevention's Global Rapid Response Team (GRRT), and to ensure health security, they had to first recognize their failed efforts in order to understand how to be sufficient in future outbreaks. In consequence of fears similar to those expressed by the interviewees of this study, the U.S. Center for Disease Control and Prevention's Global Rapid Response Team (GRRT) was created. Their dedication is solely focused on enabling rapid mobilization of qualified staff into key pieces of training that serve to increase their response time and enhance their rate of global health security (Stehling-Ariza et al., 2017).

The Center for Disease Control and Prevention (CDC) (2017) states that they now supply safety training for individuals who are expected to combat Ebola at the center of an outbreak. The training is offered to healthcare workers who can remain on the front lines of the outbreak and tend to the local communities. The purpose of the training came from the overwhelming nature of the Ebola outbreak in 2014 that left health care workers and emergency teams struggling to provide care, obtain enough supplies for the local and surrounding communities, and Ebola Treatment Units (ETUs) (CDC, 2017). This approach can be useful if being targeted at medical response teams who are deployed to resource-limited settings to provide care in face of disease outbreaks and disasters. The training should also incorporate cultural sensitivity and knowledge, and work towards promoting and obtaining cultural competence.

Ultimately, the lessons learned from the Ebola epidemic forced many national and international organizations to reevaluate their medical response processes and capacity. In an attempt to evolve, GRRT is making progress through not only culturalization but by attempting to understand where they stand when needed. Also, these efforts will attempt to address local community worry and exemplify to similar response units how they may also properly serve in an effective form.

Strategies to include locals and families in care of loved ones

With the increasing fear of immigrants who cannot care or supply treatments and resources to their loved ones who remain in Africa, there has been a new development for locals to be the voice of action within their area. The rising and genuine approach to educating each other is relying on women of the local families to be at the forefront. The goal facing Ebola, according to the World Health Organization, is to use the women to help change the perception of the disease (WHO, 2019b). Women northeast of the DRC (the Democratic Republic of the Congo) were at the epicenter when the 2018-2020 Ebola outbreak in DRC first began, and their primary goal was

to tend, heal, and take care of their families. The women's knowledge of the local culture made them efficient in helping to control the recent Ebola outbreak as opposed to the response to the 2014 Ebola outbreak in West Africa. As some of the interviewees mentioned, cultural understanding is also a requirement from local and emergency teams because when families mourn their loved ones, burial is the most important moment in that time, in which mourning over the body also contributes to the spread of Ebola. With even just one family member that may be in direct danger after exposure, there remains a compounding risk of exposure to even more families beyond their own.

Community building and understanding have been one effective way that locals in surrounding African countries have begun to deal with the spread of Ebola. The "Collectif des Associations Feminines" (CAF) is an umbrella association gathering women leaders of around 45 members to help change the perception of the Ebola virus and be the answer to their community's safety concerns. Their approach was door to door informational project whereas CDC and health workers took time to personally train and educate locals on the actual expense associated with Ebola, and the potential effects it may have on them and their family (WHO, 2019b). Not only were the locals provided ghastly details, but they were equipped with essential knowledge to protect themselves and their loved ones. Participants have found that being a part of this coalition brings forth the comfort and ability for the community to know, near or far, that they are taking part in caring for their loved ones. Therefore, community engagement and leadership during an outbreak is essential to halt the spread of disease.

Effect of communication failure on disease outbreak

Concerning the inability to effectively respond to a national epidemic and world pandemics, the 2018-2020 spread of the Ebola virus in the Democratic Republic of Congo, is the most recent comparison to 2014 Ebola outbreak of the worries of preparedness. There is a concurrent understanding when it comes to communication surrounding the 2014 Ebola outbreak and whether countries are readily equipped to respond to bigger future outbreaks. It seems that many of the questions asked during the 2014 Ebola outbreaks, continue to remain unanswered. The Ebola virus exposed the inability to handle unfamiliar infectious disease outbreak from crossing international borders. The spread exposed weaknesses that hide within the United States health care and communication systems. As a result, fears circulate that are sometimes unwarranted, and without proper communication, may lead to unnecessary actions. The problem is that such actions may ultimately derail a call for similar actions, albeit when actually warranted. Additionally, public fears may present enough pressure that public officials act on concerned sentiment rather than appropriate guidance. For example, during "the 2014 Ebola outbreak, New Jersey's governor ordered a nurse returning from Sierra Leone into quarantine although her case did not merit it under Centers for Disease Control and Prevention (CDC) guidelines" (Haffajee and Mello, 2020, page 2). In this case, a public official implemented measures in response to public demand rather than public health guidelines. Having appropriate communication surrounding disease prevention methods and outbreak control strategies learned from the 2014 Ebola epidemic, will better prepare a country for early response strategies that could slowed the rapid spread of any future infectious disease. Considering the gravity of the global threat of disease outbreaks, such as the 2018-2020 Ebola outbreaks in DRC and the current Coronavirus, national governments have failed in providing comprehensive strategies at the expense of global health, instead relying on a patchwork of responses toward epidemics (Haffajee and Mello, 2020). Without appropriate governmental support and without providing the healthcare system with comprehensive strategies and tools needed to address disease outbreak, countries can become the epicenter of virulent disease outbreak, replicating the delayed and bandaged response to Ebola outbreaks in West Africa (Haffajee and Mello, 2020).

As the global spread of disease was monitored and factors that increase transmission from local communities to large scale pandemics recognized, our individual roles and collective responsibilities must be considered. The effectiveness of emergency response teams must be reviewed and researched and adequately prepared to respond more effectively to future outbreaks. There should be adequate preparation for governmental leaders, healthcare professionals, public health strategists, front line workers, and perhaps most importantly, communities. It is only in that continually improved preparedness that hopes turns into action and saves lives.

Significance for public health

These findings and participants' suggestions have broader implications for emergency preparedness and future research. The findings highlighted the relevance of African immigrants' perceptions about how the medical response teams handled the Ebola outbreak in West Africa. Based on the findings from this study, emergency response teams will be better equipped for assisting with future disease outbreaks. Interventions focusing on increasing effectiveness of medical response teams will be useful in increasing information sharing between locals and internationals response teams and provide culturally appropriate trainings to response teams. Respondents

should be trained and have access to resources that allow them to better communicate with local health officials and media when combating unknown disease. Response teams' effectiveness can be improved by the involvement of local leaders, local healthcare providers, and affected communities in the care and treatment of infected individuals. Emergency medical response teams could help by providing affected individuals and their families with adequate information to keep them knowledgeable about Ebola.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

Anderson M (2017). African immigrant population in U.S. steadily climbs. Pew Research Center. https://www.pewresearch.org/fact-tank/2017/02/14/african-immigrant-population-in-u-s-steadily-climbs/

Bell BP, Damon IK, Jernigan DB, Kenyon TA, Nichol ST, O'Connor JP, Jordan W, Tappero MD (2016). Overview, Control Strategies, and Lessons Learned in the CDC Response to the 2014–2016 Ebola Epidemic. Morbidity and Mortality Weekly Report 65(3):4-11.

Centers for Disease Control and Prevention (2019). 2014-2016 Ebola Outbreak in West Africa. https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/index.html.

Centers for Disease Control and Prevention (CDC) (2018). Outbreaks Chronology: Ebola Virus Disease. Centers for Disease Control and Prevention (CDC). Atlanta, USA. https://www.cdc.gov/vhf/ebola/history/chronology.html

Center for Disease Control and Prevention (2017). 2014-2016 Ebola Outbreak in West Africa. https://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/index.html

Haffajee RL, Mello MM (2020). Thinking Globally, Acting Locally - The U.S. Response to Covid-19: New England Journal of Medicine 382(22). https://www.nejm.org/doi/full/10.1056/NEJMp2006740

Holloway I (1997). Basic Concepts for Qualitative Research. London (UK): Blackwell Science.

Miles MB, Huberman AM (1994). Qualitative Data Analysis: An Expanded Sourcebook. 2nd ed. Thousand Oaks (CA), USA: Sage.

National Academies of Sciences; Global Preparedness and Response Efforts (2016). The Ebola Epidemic in West Africa: Proceedings of a Workshop, U.S. National Library of Medicine. www.ncbi.nlm.nih.gov/books/NBK401928/

Rector K, Dance S (2013). For West Africans in Maryland, Ebola is a call to action. The Baltimore Sun.

Stehling-Ariza T, Lefevre A, Calles D, Djawe K, Garfield R, Gerber M, Ghiselli M, Giese C, Greiner AL, Hoffman A, Miller LA (2017). Establishment of CDC Global Rapid Response Team to ensure global health security. Emergent Infectious Disease Journal 23 (13). https://doi.org/10.3201/eid2313.170711

Thomas DR (2006). A general inductive approach for analyzing qualitative evaluation data. The American Journal of Evaluation 27(2):237-246.

Williamson T, Long AF (2005). Qualitative data analysis using data displays. Nurse Researcher 12(3):7-19.

World Health Organization (WHO) (2020). Ebola virus disease – United States of America. 2014 Disease outbreak news. https://www.who.int/csr/don/01-october-2014-ebola/en/

World Health Organization (WHO) (2019a). Ebola outbreak 2014-2016. https://www.who.int/csr/disease/ebola/en/.

World Health Organization (WHO) (2019b). Women are key in Ebola response. https://www.who.int/news-room/facts-in-pictures/detail/women-join-hands-to-oust-ebola-from-drc.

World Health Organization (WHO) (2018). Ebola virus disease. Fact sheet No 103. Updated February 2018.World Health Organization (WHO). http://www.who.int/en/news-room/fact-sheets/detail/ebolavirus-disease.