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# **Socio-Cultural Factors Associated with Epidemics: The Case of 2014 Ebola Outbreak**

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## **ABSTRACT**

Public health behaviors often frame issues as ascribed or related to individuals' actions or inaction. This framing suggests that poor health occurs because individuals are unable or unwilling to heed preventive messages or recommended treatment actions. Moreover, the United Nations Millennium Development Goals call for strategies to reduce combat specific diseases using individual behavioral measures as well as develop a partnership between countries for health development. Using the PEN-3 cultural model as an analytical framework, the objective of this work is to assess the role played by socio-cultural factors in the spread and or prevention of Ebola Virus Disease (EVD) in West Africa. Results of the study revealed that positive, existential and negative factors were associated with the spread of EVD. Future interventions targeting EVD propagation in low-income countries should address socio-cultural factors, as they are necessary to support health equity.

Classification JEL : H31, I32

## INTRODUCTION

Since the discovery of Ebola Virus Disease (EVD) in Yambuku in Zaire (now the Democratic Republic of Congo), there has been nearly 20 outbreaks that had been limited in size and geographic spread (CDC, 2014a; Jones, 2011; Marais et al., 2015). Although EVD has not evolved to become more contagious, the most recent EVD outbreak in West Africa that began in Guinea during December 2013 is larger than all previous epidemics combined (Briand et al., 2014; WHO Ebola Response Team, 2014.) Based on the latest World Health Organization update, 22,092 cases of EVD and 8,810 deaths had been reported by January 25, 2015 from Guinea, Liberia, and Sierra Leone (WHO, 2015). While a number of factors have been cited as contributors to the spread of the current EVD including but not limited to the legacy of colonialism, developmental neoliberalism, inequality, inadequate health care system, and informal urban settlements, the role of cultural beliefs as well as the attitudes associated with prejudice and discrimination towards EVD patients and healthcare workers has received less attention (Davtyan, Brown, & Folayan, 2014; Jones, 2011; Snyder, Marlow, & Riley, 2014).

Similar to other epidemics such as the plague, cholera, leprosy, and most recently HIV, health-related stigma has had negative impacts on EVD prevention efforts (C. Airhihenbuwa et al., 2009; Cross, 2006; Davtyan et al., 2014). For example, Ebola-related fear and stigma combined with cultural beliefs that EVD may be spread by Western healthcare workers are possible reasons for fatal attacks on healthcare providers working to prevent further EVD infections (Karamouzian & Hategekimana, 2015). Community members have also stigmatized the relatives of patients who died from EVD, resulting in some people's properties being destroyed and not being able to return home

for having had contacts with EVD patients (Kinsman, 2012). Among people infected with EVD, those who survive the disease also face stigma, rejection, violence, and rumors blaming them for spreading the disease (WHO, 2014b). Ebola-related stigma also affects children, resulting in family members not adopting children orphaned by EVD due to fear of contagion (Bichell, 2014).

### **Theoretical Framework**

One model that has been at the forefront of understanding the influence of culture on health is the PEN-3 cultural model (Iwelunmor et al., 2014). Developed by Airhihenbuwa (1989), the model places culture at the core of the development, implementation and evaluation of successful public health interventions (Airhihenbuwa & Webster, 2004; Airhihenbuwa, 2007). He described that to centralize culture in health interventions, three domains of health beliefs and behavior should be taken into account: (1) Cultural Identity, (2) Relationships and Expectations, and (3) Cultural Empowerment. Each domain includes three factors that form the acronym PEN; Person, Extended Family, Neighborhood (for the Cultural Identity domain); Perceptions, Enablers, and Nurturers (for the Relationships and Expectation domain); Positive, Existential and Negative (for the Cultural Empowerment domain). Within the Cultural Empowerment domain, health issues are investigated first by identifying practices that are positive highlighting values that are existential and have no harmful health consequences before identifying negative practices that serve as barriers. Using the PEN-3 cultural model as an analytical framework, the objective of this study is to assess the role played by socio-cultural factors in the spread of EVD during its most recent outbreak in West Africa.

## **METHODS**

An analysis of 98 news articles in English from US, British and African newspapers and on the Lexis-Nexis data was conducted for period between February 2014, when the first reports of the outbreak appeared, and March 2015 when Liberia released its last patient were identified and saved as the outbreak unfolded (BBC news, 2015). The initial article corpus was created by using the terms “Ebola”, “ Africa,” and “factors.” Book reviews, duplicate copies of the same story and letters to the editor were excluded.

As the first significant outbreak in the West African region occurred, most of the affected communities were not adequately familiar with Ebola virus (WHO Ebola Response Team, 2014). Health beliefs, cultural practices, and human behavior have combined to fan the dispersal of the disease. Using the *cultural empowerment* dimension of the PEN-3 model, we analyze the role of sociocultural factors influencing the West African EVD outbreak in 2014.

## **RESULTS**

As stated by C. O. Airhihenbuwa (1995), *positive behaviors* are attitudes or behaviors that are based on health and actions known to be beneficial to individual, family, and community. While Ebola can be spread through poor hygienic practices, numerous positive cultural practices have contributed to the efforts to stop the spread of the epidemic (Vaughn, 2009;Dogra. 2015). The sense of selflessness and duty to serve individual in the community, a common value in the high context culture of the afflicted West African countries was used in health messages (Appiah, 2012). Moreover,

indigenous African organizations, such as The Gbowee Foundation, led efforts that utilize community loyalty to train community members how to combat Ebola (Davis, 2014). These volunteers willingly face extreme danger and the possible stigmatization associated with the pandemic to make their homeland a safer place (Sayon, 2014).

A second emergent sociocultural positive factor included the role played by the West African media. This factor especially mattered due to the restriction of movement and on public gatherings imposed during this crisis (Nkanga, 2014). Despite the fear of catching the virus itself, numerous African journalists took great risk to report on the virus in order to inform their fellow countrymen of the dangers of the disease (Mark, 2015). These efforts allowed individuals living in EVD endemic areas to use preventative measures and created an upsurge in EVD awareness.

The wide spread of EVD has also highlighted numerous sociocultural *negative behaviors*, which are defined as health beliefs and actions that are known to be harmful to health, or were triggering factors (C. O. Airhihenbuwa, 1995). For the EVD outbreak, these include certain traditional burial practices, bush meat consumption, and beliefs regarding EVD, each of which contributed further to the spread of EVD (Alexander et al., 2015). The cultural practices around funerals in Liberia, Sierra Leone and Guinea have stirred a debate within epidemiologists. Customs such as remaining close to the sick family member to nurse them, touching and/ or embracing the deceased combined with the cleaning and grooming of the victim's body by family members have been identified as triggering factors in the spread of the disease due to a high viral load present in Ebola

victims (Bah & Aljouidi, 2014; Bah et al., 2015). The deeply rooted tradition of large family gathering at funerals has also been recognized as very likely as having increase the spread of this outbreak. International as well as indigenous health organizations have been working to inform populations of the dangers of these practices (Thompson, 2014).

Another important *negative factor* that has contributed to the socio-ecological dynamic of the affected areas and facilitate the outbreak, has been the consumption and trade of ‘bush’ meat (Leach, 2010). ‘Bush meat’ has been defined loosely as a stew containing pepper and cassava as well as potentially fruit bat or chimpanzee, both of which harbor Ebola virus (Mitman, 2014). In much of West Africa, fruit bats and bush meat are part of the daily diet. In practice, this cultural preference has been proven to increase the risk of contracting the virus. If the infected bats or monkeys are raw or undercooked, the likelihood of the consumer contracting the virus is very high. Moreover, the World Health Organization warns people to avoid contact with these animals (BBC News, 2014).

Concerns, myths, and ideas of conspiracy have contributed to the spread as well (Bah & Aljouidi, 2014). An especially problematic negative behavior that added to the spread of EVD in West African countries included Ebola conspiracy theories. This stems from the fact that the United States Center for Disease Control holds a patent that grants ownership of any research and studies carried out on EVD (Patanè, 2014). Although this patent is for a different strand of Ebola from the one currently ravaging West Africa, this fueled a belief this had a role in creating the disease. (Jamal, 2014;



Ndika, 2014; Towner, Nichol, Comer, Ksiazek, & Rollin, 2009). Currently, several recognized discussed motives existing among African populations for the U.S. creation or re-creation of EVD include profiting from providing a cure for the disease and/or working hand-in-hand with the pharmaceutical industry, as well as the belief that Ebola was purposely administered to African civilians in the form of a vaccination under the guise of humanitarian assistance (Gostin, 2014; Jamal, 2014). These beliefs lead to health workers being met with suspicion and distrust in Liberia and Sierra Leone. This, in turn, increase the likelihood of individuals resorting to home remedies or simply waiting to go to the doctor until only after the disease has progressed too substantially (Omonzejele, 2014). Other consequences included patients with confirmed cases have evaded subsequent follow-up by medical teams, and patients' contacts being ostracized in areas (Omonzejele, 2014). This hindered the ability of health care workers to treat the patient and stop the virus from infecting the people around them, effectively aiding in the spread of EVD (Thompson, 2014).

## **CONCLUSIONS**

EVD, like HIV, is viewed as a death sentence in most of West Africa and this perception from community members make it difficult for public health efforts to be successful (Karamouzian & Hategekimana, 2015; WHO, 2014b). Culture combined with community's hygienic practices, beliefs about diseases as well as dietary habits have a large impact on populations' health outcomes (Vaughn, 2009). The current outbreak of

Ebola, which began in March 2014 and has killed over 9,000 people, is the deadliest outbreak since the virus was discovered in 1976. Consequently, behavioral scientist must understand the socio-cultural factors associated with these outbreaks such as the 2014 Ebola outbreak in order to design the necessary interventions that can enhance health equity and prevent the spread of such viruses in low-income countries in the Post- MDG context. This outbreak highlight the need of research on re-appearing infectious diseases as well as the need for these diseases to be included in the development of new health-related Millennium Development Goals.

Although the socio-cultural practices highlighted in this work have been shown to contribute to the spread of Ebola, any future efforts to eradicate and/or contain these outbreaks such as mandated by the MDG 6 should also include the construction of infrastructures on the African continent as the dearth of them was the main structural contributor to the course of the epidemic (Jones, 2014).

## REFERENCES

- Airhihenbuwa, C., Okoror, T., Shefer, T., Brown, D., Iwelunmor, J., Smith, E., ... Shisana, O. (2009). Stigma, Culture, and HIV and AIDS in the Western Cape, South Africa: An Application of the PEN-3 Cultural Model for Community-Based Research. *The Journal of Black Psychology*, 35(4), 407–432. <http://doi.org/10.1177/0095798408329941>
- Airhihenbuwa, C. O., & Webster, J. D. (2004). Culture and African contexts of HIV/AIDS prevention, care and support. *SAHARA J: Journal of Social Aspects of HIV/AIDS Research Alliance / SAHARA , Human Sciences Research Council*, 1(1), 4–13. <http://doi.org/10.1080/17290376.2004.9724822>
- Alexander, K., Sanderson, C., Lewis, B., Rivers, C., Shaman, J., & Drake, J. (2015). What factors might have led to the emergence of Ebola in West Africa? Retrieved March 8, 2015, from <https://bioethics.georgetown.edu/what-factors-might-have-led-to-the-emergence-of-ebola-in-west-africa/>

Appiah, K. A. (1992). *In My Father's House: Africa in the Philosophy of Culture*. Oxford University Press.

Bah, E. I., Lamah, M.-C., Fletcher, T., Jacob, S. T., Brett-Major, D. M., Sall, A. A., ... Fowler, R. A. (2015). Clinical Presentation of Patients with Ebola Virus Disease in Conakry, Guinea. *New England Journal of Medicine*, 372(1), 40–47. <http://doi.org/10.1056/NEJMoA1411249>

BBC News. (2014). Sierra Leone foreign Ebola relief operation criticised. Retrieved March 8, 2015, from <http://www.bbc.com/news/world-africa-30267600>

BBC News. (2015, March 5). Liberia releases last Ebola patient. Retrieved March 5, 2015, from <http://www.bbc.com/news/world-africa-31744616>

Bichell, R. E. (2014). After Losing Parents To Ebola, Orphans Face Stigma. Retrieved March 7, 2015, from <http://www.npr.org/blogs/goatsandsoda/2014/10/03/353473707/after-losing-parents-to-ebola-orphans-face-stigma>

Briand, S., Bertherat, E., Cox, P., Formenty, P., Kieny, M.-P., Myhre, J. K., ... Dye, C. (2014). The International Ebola Emergency. *New England Journal of Medicine*, 371(13), 1180–1183. <http://doi.org/10.1056/NEJMp1409858>

CDC. (2014). Ebola Outbreaks 2000-2014. Retrieved from <http://www.cdc.gov/vhf/ebola/outbreaks/history/summaries.html>

Cross, H. (2006). Interventions to address the stigma associated with leprosy: a perspective on the issues. *Psychology, Health & Medicine*, 11(3), 367–373. <http://doi.org/10.1080/13548500600595384>

Davis, A. (2014, October 21). Liberia: Gbowee Foundation Provides Ebola Contact Tracing Education, Distributes Us\$45,000 for Awareness Initiatives. *Liberian Observer (Monrovia)*. Retrieved from <http://allafrica.com/stories/201410211201.html>

Davtyan, M., Brown, B., & Folayan, M. O. (2014). Addressing Ebola-related Stigma: Lessons Learned from HIV/AIDS. *Global Health Action*, 7(0). <http://doi.org/10.3402/gha.v7.26058>

Dogra, N., Li, S., & Ertubey, C. (2015). Culture and health. *Lancet*, 385(9968), 601–602. [http://doi.org/10.1016/S0140-6736\(15\)60227-6](http://doi.org/10.1016/S0140-6736(15)60227-6)

Gostin, L. O. (2014). Ethical allocation of drugs and vaccines in the West African ebola epidemic. *The Milbank Quarterly*, 92(4), 662–666. <http://doi.org/10.1111/1468-0009.12089>

- Iwelunmor, J., Newsome, V., & Airhihenbuwa, C. O. (2014). Framing the impact of culture on health: a systematic review of the PEN-3 cultural model and its application in public health research and interventions. *Ethnicity & Health, 19*(1), 20–46. <http://doi.org/10.1080/13557858.2013.857768>
- Jamal, S. (2014). *Is the World Prepared for Epidemics Like Ebola?* (International Relations Insights & Analysis). Retrieved from <http://www.ir-ia.com/reports/IRIA-Is-the-World-Prepared-for-Epidemics-Like-Ebola.pdf>
- Jones, Jared. (2011). Ebola, Emerging: The Limitations of Culturalist Discourses in Epidemiology. Retrieved from <http://www.ghjournal.org/ebola-emerging-the-limitations-of-culturalist-discourses-in-epidemiology/>
- Leach. (2010). WHO | Time to put Ebola in context. Retrieved March 8, 2015, from <http://www.who.int/bulletin/volumes/88/7/10-030710/en/>
- Marais, F., Minkler, M., Gibson, N., Mwau, B., Mehtar, S., Ogunsola, F., ... Corburn, J. (2015). A community-engaged infection prevention and control approach to Ebola. *Health Promotion International*. <http://doi.org/10.1093/heapro/dav003>
- Mark, M. (2014, November 5). Sierra Leone: Journalist arrested after questioning official Ebola response. Retrieved March 6, 2015, from <http://www.theguardian.com/world/2014/nov/05/ebola-journalist-arrested-over-criticism-sierra-leone-government-response>
- Mitman, G. (2014). Ebola in a stew of fear. *The New England Journal of Medicine, 371*(19), 1763–1765. <http://doi.org/10.1056/NEJMp1411244>
- Ndika, C. (2014, September 2). Ebola: Recovery of Two Americans Sharpens Divisions in Global Health | The Mettaboy Report. Retrieved from <http://mettaboy.blogspot.com/2014/09/ebola-recovery-of-two-americans-health.html>
- Nkanga, Peter. (2014, October 20). In Fighting Ebola, Journalists Can Play Important Role. Retrieved February 28, 2015, from [http://www.huffingtonpost.com/committee-to-protect-journalists/in-fighting-ebola-journal\\_b\\_6016414.html](http://www.huffingtonpost.com/committee-to-protect-journalists/in-fighting-ebola-journal_b_6016414.html)
- Omonzejele, P. F. (2014). Ethical Challenges Posed by the Ebola Virus Epidemic in West Africa. *Journal of Bioethical Inquiry, 11*(4), 417–420. <http://doi.org/10.1007/s11673-014-9587-3>
- Patanè, S. (2014). Ebola: Is there a hope from treatment with cardiovascular drugs? *International Journal of Cardiology, 177*(2), 524–526. <http://doi.org/10.1016/j.ijcard.2014.08.114>

Sayon, M. O. g. (By Morrison O.g. Sayon). West Africa: Regional Efforts Against Ebola Intensify. *The Inquirer (Monrovia)*. Retrieved from <http://allafrica.com/stories/201412101787.html>

Snyder, R. E., Marlow, M. A., & Riley, L. W. (2014). Ebola in urban slums: the elephant in the room. *The Lancet Global Health*, 2(12), e685. [http://doi.org/10.1016/S2214-109X\(14\)70339-0](http://doi.org/10.1016/S2214-109X(14)70339-0)

Towner, J. S., Nichol, S. T., Comer, J. A., Ksiazek, T. G., & Rollin, P. E. (2012, October 4). Human Ebola Virus Species and Compositions and Methods Thereof. Retrieved from <http://www.google.com/patents/US20120251502>

Vaughn, F. J. (2009). Cultural Health Attributions, Beliefs, and Practices: Effects on Healthcare and Medical Education. *The Open Medical Education Journal*, 2, 64–74.

WHO. (2014). WHO | Guinea: Life after Ebola has new meaning for 2 survivors now helping others. Retrieved March 8, 2015, from <http://www.who.int/features/2014/life-after-ebola/en/>

WHO. (2015). *Ebola Response Roadmap*. Retrieved from [http://apps.who.int/iris/bitstream/10665/151311/1/roadmapsitrep\\_4Feb15\\_eng.pdf?ua=1&ua=1](http://apps.who.int/iris/bitstream/10665/151311/1/roadmapsitrep_4Feb15_eng.pdf?ua=1&ua=1)

WHO Ebola Response Team. (2014). Ebola Virus Disease in West Africa — The First 9 Months of the Epidemic and Forward Projections. *New England Journal of Medicine*, 371(16), 1481–1495. <http://doi.org/10.1056/NEJMoa1411100>