

Ethnomedicinal Practices and Behavioral Changes During Deadly Disease Outbreaks: A Commentary and Lesson from Cameroon

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By

In mid-2014, six months after the death of patient zero, the two-year-old boy in the village of Meliandou in Guinea, there were frequent reports of Ebola spikes across Guinea and beyond other parts of West Africa. I had just defended my PhD and soon after was accepted for a postdoctoral fellowship at Rhodes University, South Africa for the following year. In October 2014, I travelled to Cameroon to get my visa at the South African embassy in Yaoundé. A week before my trip to Cameroon, I chatted with my friend Acho on Facebook messenger about my upcoming visit. Acho told me: “OK! Nice to hear that, but before coming make sure you have consumed enough bitter kola (garnicia), as it is the only remedy against Ebola.”

When I asked Acho to elaborate, she explained that for some months now, there had been a bitter kola frenzy, as people were buying the nut in bulk and stockpiling supplies at home. To protect themselves from Ebola, Acho told me, people often consumed two nuts in the morning and two in evening. From this chat with Acho about emerging bitter kola consumption practices and my rapid ethnography in Cameroon (detailed below), I argue in this piece that affiliating to ethnomedicine seems to be – at least, in part – a social response to the lack of formal healthcare options in the face of grave health-related anxiety in Cameroon.

My curiosity about bitter kola ethnomedicinal practices grew, and a Facebook exchange with Merrill Singer (my host mentor during my Ghent University research mobility fellowship at the University of Connecticut in 2013), led to the impetus for a collaborative pilot project to study the social dimensions of emerging infectious diseases, especially Ebola. In particular, our conversation prompted interest in the folk dimensions of ethnomedicinal therapy and its circulation on various social media platforms,[\[1\]](#) which became the foundation of our Ebola epidemic-related writing project.

Merrill suggested that my focus should be on popular attitudes and inclinations towards prevention of infectious diseases held by study

participants, including fears about Ebola coming to Cameroon. I had noticed that as Ebola cases and deaths rose in the wider region, popular concern about the disease in Cameroon sparked an increase in processes of active social affiliation and communication that affirmed people's existing worldview while affording them a venue for direct action. I also discovered other preventive practices, such as drinking salt solution and bathing with salt or salt bath (Ngade et al., 2016). Given these initial on-the-ground observations, Merrill and I decided to conduct an ethnographic study about the various ethnomedicinal behaviours people engaged in with regard to treating and preventing Ebola.

When I arrived at Rhodes in January 2015, we prepared a project proposal and submitted ethics applications to the University of Connecticut and Rhodes University, simultaneously. After receiving ethics approval from both institutions, I travelled to Cameroon to conduct fieldwork in Yaoundé and Limbe. Data from Cameroon led to two publications, which discussed ethnomedicinal behaviours: "Washing Away Ebola Environmental Stress, Rumor, and Ethnomedical Response in a Deadly Epidemic", and "Implications of Changing Attitudes towards Game Meat Consumption at the Time of Ebola in Limbe, Cameroon" were published. Data for these publications revealed a series of "infodemic" habits; namely: the spread of messages about Ebola prevention by word of mouth about other ethnomedicinal practices such as salt-water bath and drink as Ebola prevention in light of theories on the spread of rumors.

A third, unpublished piece, "Local Knowledge, Local Action: Popular Ethnomedical Response to the Ebola Threat in Yaoundé, Cameroon," embraced a particular ethnomedicinal behavior: an increased use of "bitter kola," the nut of the *Garcinia kola* tree. The increase in this practice, we argued, did not reflect a dramatic adoption of new uses for old things; but rather an intensification of culturally familiar practices. This intensified interest and participation in bitter kola use underscores the importance of studying responses to fear of deadly emerging infectious diseases (SARS, MERS, Ebola, and COVID-19) through the careful on-the-ground analysis afforded by ethnographic research. Ethnomedicinal behaviors related to bitter kola saw price increase of local sellers, stockpiling of the nuts at homes, and self-prescription of daily intakes (usually two nuts in the morning and two in the evening).

What is bitter kola (*garcinia kola*)?

Bitter kola is the seed of the fruiting body of a tree native to tropical moist lowland forests in several parts of West Africa. The tree is actively cultivated and harvested by farmers in Cameroon, often for profit but also for personal use. The seeds have been found to contain bioflavonoids (known to have inhibitory effects on various pathogens), xanthenes (with

insecticide capacity) and benzophenones (with anti-allergen qualities). The seed has numerous purported therapeutic uses in ethnomedical practice, including for malaria (perhaps because of its content of quinone, an organic compound with known antimicrobial and antiparasitic properties), bodily aches and pains, headaches, arthritic conditions, cough and other bronchial or respiratory issues, dysentery, osteoarthritis, emotional enhancement (e.g., for treatment of depression, melancholy, chronic fatigue), as an aphrodisiac or for sexual enhancement, as a hunger suppressant, and for relief from constipation and abdominal pain or other gastric problems (Iwu et al., 1999). The seed also is consumed as a supplement taken with beer and palm wine, generating some commercial interest in alcoholic beverages infused with bitter kola. Several studies have investigated the potential anti-inflammatory, antimicrobial, anti-oxidant, and anti-viral properties of *Garcinia kola* (Iwu et al., 2002, Akingboye et al., 2015).

Bitter kola has a noteworthy social and cultural life in Cameroon and in the wider region, as do other consumed nuts. Based on casual observations of everyday social activities and conversations with associates during my fieldwork in 2015, I observed (and participated in) the use of the bitter kola to enhance sociability. In bars, for example, friends often offer bitter kola to each other. Such offerings have several social meanings. First, they are a readily available way to spice up the taste of beer and improve its flavor in the experience of users. Second, sharing bitter kola while drinking promotes affability among peers. Finally, offering bitter kola constitutes a meaningful way to encourage and support friends in their sexual activities, as the nut is seen as a sexual stimulant. Thus, bitter kola holds value beyond its ethnomedicinal properties.

The Association between Bitter Kola and Ebola

At the 16th International Botanical Congress in St Louis in 1999, Dr. Maurice Iwu and colleagues reported research that indicated that *Garcinia kola* “was found to possess remarkable activity against a variety of viruses including ... Ebola” (Iwu et al., 1999). At the time, Ebola was characterized by short-term and quite localized epidemic outbursts in Central and Eastern Africa. The epidemic that began in West Africa in March 2014 (the first case actually occurred at the end of 2013) quickly evolved into the most geographically extensive and enduring outbreak, with cases showing up in Guinea, Sierra Leone, Liberia, Nigeria, the United States, and parts of Western Europe. The speed and extent of viral transmission has been linked to human mobility patterns, the virus’ relatively long incubation period, weak local and national public health infrastructure, intense stigma expressed toward infected individuals who consequently avoided seeking care, and mistrust of protectively clothed healthcare professionals and messages from the government.

By April 2016, over 28,500 people had contracted Ebola in the largest outbreak on record, resulting in more than 11,000 deaths (WHO 2016). Disease experts, perhaps pushed to worst-case thinking by early inaction in response to the outbreak, projected that the epidemic might spread to 1.4 million people by the end of January 2015. By contrast, the previous worst Ebola outbreak occurred in 1976 and involved 602 identified cases that resulted in 431 deaths. Ultimately, on May 2, 2016, the Ebola outbreak was declared over by the World Health Organization (WHO), and public health officials, researchers, and the general public began to assess what was learned during the costly epidemic.

One significant impact was the development of especially widespread dread and degrees of panic within several African countries and globally (Farmer, 2014). As the WHO (2014) noted, the epidemic sparked an “emotional climate of intense fear.” Within Cameroon, specifically, there was considerable popular anxiety about Ebola traveling across the country’s borders, particularly after cases were diagnosed in the neighboring country of Nigeria. Bitter kola, notwithstanding its use in the atmosphere of dread and climate of fear during a deadly pandemic, has for centuries been used in African culture for both traditional and medicinal purposes (Tchimene et al., 2016).

Magic cures in COVID-19 as in Ebola

The example of bitter kola behaviors helps us reimagine the considerable level of street and local media discussion about available cures for other conditions, including for COVID-19, in Cameroon. On May 2020, according to Voice of America (VOA) news, Cameroon Prime Minister Joseph Dion Ngute met Bishop Kleda^[2] to discuss the purported herbal remedy for COVID-19 that the Bishop claimed to have discovered and with which he claimed to have cured 1500 people from the condition. The religious prominence of Bishop Kleda, coupled with the popular media discussion of the results of his COVID-19 cure resulted in the widespread dissemination in Cameroon of rumors that his magical remedy actually worked. The frenzy around Bishop’s herbal cure led to a further fraudulent scheme of “Kledavid”^[3] which fraudsters sold in bottles around the country. Bishop Kleda denounced Kledavid, contradicting rumours that that the bottles circulating were from him, further adding to the confusion around what was true. Indeed, this is the special nature of rumor: namely that it not constrained by objective standards of truth.

One of rumor’s functions is to allow people to make sense of an ambiguous situation or to assist them in adapting to perceived or actual threats to their well-being. Rumor, Difonzo and Bordia (2007) argue, attracts people’s attention, evokes their emotions, incites their participation, and, consequently, impacts both attitudes and actions,

especially during pandemic outbreaks like COVID-19. Through these rumor-stimulated changes, people are assisted in making some sense of what is going on in the troubling face of uncertainty (Ronsow, 2001, DiFonzo & Prachant, 2007).

At stake in the dissemination of information about bitter kola as Ebola treatment or the magic cure by Bishop Kleda against COVID-19, is not only the effectiveness of these treatment regimens for emerging infectious diseases, but the ability of individuals to meaningfully pursue non-biomedical therapies. Global health campaigns are often willing to condemn or even pathologize alternative medicine in non-Western populations while simultaneously understanding the adoption of such practices as a shift towards new, interesting, and informed health behaviors on the part of Western populations. As Charles Briggs and Mark Nichter remind us, there are “cultural politics and material inequalities that give some people credit for producing knowledge about health and label the efforts of others noncompliance, ignorance, superstition, or just plain cultural difference” (Briggs & Nichter, 2009).

People are sometimes aware of these criticisms of alternative healing and preventative practices, but they also are aware of the limits of biomedicine, including both its occasionally insensitive approaches to the provision of care and its various and often severe barriers to access. In the midst of these outbreaks, what we observe is often a calculated behavioral changes encouraged by people who may be considered trustworthy and informed sources: church leaders, work colleagues, family members, and friends. Meanwhile, people try to manifest proactive and effective social changes (handwashing, masking, distancing) that have been immensely important for slowing the spread of such disease outbreaks.

The Cameroonian healthcare infrastructure is weak, reliable public health information is sparse, and people don't know who to trust. This is reflected in a life expectancy at birth of 57.3 years (CIA World, 2020). The country faces a severe shortage of medical professionals, especially doctors (caused in part by a brain drain of its healthcare professionals) – there are fewer than one doctor for every 10,000 individuals (one of the lowest in the world) and 1.3 hospital beds for this same population segment – and the Cameroonian health system struggles to offer even a moderate level of care to patients. Given the shortage of doctors, health services in Cameroon are often provided by nurses. Egbe (2013) has identified the key challenges facing Cameroon as: the development of human resources needed for the effective functioning of health facilities, the provision of quality care, and increasing the country's ability to respond to health threats and human disasters.

By contrast, alternative responses like consuming bitter kola during Ebola

and Bishop Kleda's COVID-19 herbal remedy were readily available using an accessible discovery process based on something culturally meaningful and socially normative. Research in Cameroon suggests that traditional health practices continue to be valued in Cameroon and are widely practiced. Moreover, in the context of Ebola and COVID-19, there has been no dependable way for prevention except for retreating fully from social engagement. That is why in the atmosphere of trepidation and uncertainty gripping the population, many turned to healthcare strategies that are available, affordable, familiar, and believed to be efficacious.

This behavioral adjustment suggests that in context of perceived health threat, people do not respond passively or fatalistically but rather, take action and change their behaviors, in ways that have the potential to impact epidemics. Educational campaigns need to target the spread of rumors and misinformation through social media and radio trottoir (pavement radio)[4] in Cameroon, as these are often the sources of over-abundance of information that mislead public behavior and making it difficult for public health to combat disease spread.

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Notes

[1] A good example was a BBC News report (of August 6, 2014) hash tagged a statement, #BBC Trending: "The Ebola cure that offers false hope". According to BBC the statement circulated with plausible information that "Bitter-Kola has been internationally verified to cure Ebola", reads the note, and circulated on messaging apps and other social media. "Pls do not forget to share cheers!!!" (<https://www.bbc.com/news/blogs-trending-28665324>). The titled of this article (published by Channels Tv on August 9, 2014) is: "Ebola: Bitter Kola Stops Replication Of Virus, Not A Cure".

[2] The Archbishop of the Douala catholic archdiocese

[3] The name given to his magic cure

[4] Francophone Africa, rumor production popularly is known as radio-trottoir (pavement radio), the news broadcasted on the sidewalk. This understanding of rumor reflects what Shibutani (1966) has called the "improvised news" that people use to get their information about what is going on. Given mistrust of official, government-influenced news sources, people may only trust what they hear on the streets in the "bar, market,

living-room or taxi-park” (Ellis, 1989)

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