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Abstract

Conspiracies surrounding pandemics have existed for centuries, if not millennia. Some of the most dramatic and sensationalized pandemics—namely Ebola, HIV/AIDS, and Covid-19—have taken the world by storm. And the conspiracies and mis-information campaigns surrounding these pandemics have persisted in a similar vein. Notably, while there are distinct differences between the terms conspiracy, misinformation, and disinformation, this article does not seek to disentangle these terms and their separate effects. Instead, it treats them all as informational distortions – or infodemics – that all have profound consequences on the propagation of infectious diseases.

Thus, the three aforementioned pandemics are worth examining as they are illustrative of the following: (a) the entrenched nature of conspiracy within the human mind and societies; how infectious diseases are perpetuated and exacerbated beyond their inherent infectivity and transmission modalities with spreading infodemics; and why the realm of public health must develop a sophisticated arsenal to cope with these bête noires.

Deep History of Infectious Disease Conspiracies

Almost no century has been immune to the emergence of conspiracy theories that surround deadly infectious diseases. Dating as far back as the 1300s, the Bubonic Plague, also known as the Black Death, ravaged Europe, and decimated half of the entire population. The prominent religious minority at the time, Jewish people, were widely accused of poisoning water wells; as a result, legions of Jewish people were burnt alive and/or massacred. In the early 1830s, cholera struck the U.S., and conspiracies rapidly promulgated about the culpability of Irish immigrants in the disease’s origin and transmission. Doctors were attacked and murdered on the streets by masses accusing them of using cholera victims for dissection specimens in anatomy schools. The Russian cholera epidemic of 1892 was blamed on a government-led, genocidal conspiracy as a veiled affront on the impoverished underclass. In 1899, Bubonic Plague outbreaks in Hawaii were pinned on the Chinese, and angry mobs burnt Chinese quarters to the ground.

Ebola Conspiracies

The emergence of Ebola in the 1970s in Zaire—and its subsequent re-emergences in the 2000s in Sierra Leone, Liberia, Guinea, Nigeria, Senegal, and Democratic Republic of Congo—would know a similar conspiratorial fate to the Bubonic plague and cholera of the 1300s and 1800s. Despite the rarity and high fatality of the disease in western African countries, Ebola, a disease, which can cause significant internal and external hemorrhaging and multi-organ failure, was deemed to be unreal. According to Dr. Tejan, a trauma orthopedic surgeon in Texas who grew up in Sierra Leone, many Liberians thought that the concept of Ebola was “all stories, all lies...even if it was right under their noses” and that “people would not believe it until it got very close to them, and killed their loved ones.” Ebola was often dismissed by Western Africans as a “headache, malaria, or typhoid” or any other disease or disorder previously encountered, rather than the deadly scourge that it was and still is. The survivors of Ebola experienced community alienation and stigmatization,
and were rendered as outcasts and “false declarers of Ebola”. During Ebola outbreaks in Sierra Leone, Guinea, and Liberia in 2014, locals were highly suspicious that Ebola cloaked a hidden political agenda conjured by the government as a money-making ruse or an attempt at voter suppression. Others held more malevolent conspiracies, believing that the government or U.S. Agencies were utilizing Ebola as a bioweapon devised to depopulate the planet. Medical personnel—especially those operating in the Ebola Treatment Centers (ETCs) —were accused of deliberately infecting African patients or luring them into intricate trafficking schemes to harvest blood, organ, and tissue for profit. Even the ambulance rides to ETCs were perceived by the people of Guinea and Sierra Leone as a “one-way ticket to a death camp”. Dr. Tejan noted that even to the current day, many Western Africans believe that Ebola is a vehicle “for the white man to come and kill [them]” or “experiments by Americans to try on the African people as War practice”.

**HIV/AIDS Conspiracies**

Since its official discovery in 1983 by researchers at the Pasteur Institute in France, HIV has similarly known its share of conspiracy narratives—especially those which are racialized, politicized, and sexualized. Similar to Ebola, the existence of HIV/AIDS was vehemently denied, especially by Africans. In 2000, the then-president of South Africa, Thabo Mbeki, told world leaders about his pervasive doubts about HIV as the exclusive cause of AIDS. Mbeki openly and critically interrogated AIDS statistics, poverty and socioeconomic dimensions of the disease, the potential dangers of antiretrovirals, and the perceived stalling on the distribution of preventative treatments for HIV-infected mothers. He further based his arguments on a notion that Western drug companies used antiretroviral drugs to boost their profits. Herbal or other non-pharmaceutical remedies were recommended as another recourse for HIV/AIDS rather than antiretrovirals, as some believed that HIV was correlated with symptoms of malnutrition, tuberculosis, syphilis, poisoning by various pesticides or insecticides, vaccinations, immunosuppressive drugs, inhalants, food additives, or even metal poisoning. Other African officials declared that HIV/AIDS was a plot to exterminate the Black African population by either white Africans or the United States. Things became more complicated as misinformation campaigns arose and spun out of control. For instance, the Russian disinformation campaign known as “Operation Infektion” was conceived by the KGB in the 1980s to embed the idea that the U.S. Pentagon had invented HIV/AIDS as a bioweapon research project at a military-biological laboratory in Fort Detrick, Maryland. Operation Infektion promulgated that scientists from the Centers for Disease Control were motivated to exterminate African, Latin, and Asian peoples. However, the conspiracy was later undermined as a Russian plot to cultivate anti-Americanism and engender militaristic tension between the U.S. and other countries. In several segments of Africa as well as the United States, these genocidal HIV/AIDS conspiracies toward members of the Black or LGBTQ communities are still believed. According to the RAND Corporation study conducted at Oregon State University in 2005, 1 in 7 African Americans believed that HIV/AIDS was created to deracinate the Black population.

**Covid-19 Conspiracies**

Since March 2020, a groundswell of conspiracy narratives have taken root, providing some stunning historical parallels to those with Ebola and HIV/AIDS, and some divergent ones tailored to the contemporary geopolitical landscape. In July 2020, a study at the University of Pennsylvania Annenberg Public Policy Center revealed that 37% of Americans endorsed the bioweapons conspiracy of the coronavirus developed by the Chinese government. Nearly 3 in 10 Americans believed that Covid-19 was intentionally or inadvertently devised in a laboratory setting. Almost 17% of Americans believed that some agents of the pharmaceutical industry engineered the Covid-19 virus to augment sales for newfangled drugs and vaccines. Genetically modified organisms have been thrown into the primordial conspiratorial stew as well, as anti-GMO proponents have cited a speculative mechanism that genetic pollution fosters viral proliferation of the Coronavirus. 5G has also been touted as a cause of, or undercover plot to, the Coronavirus: while some individuals state that Covid-19 provides a ruse for a subterranean plot to fast-track the implementation of 5G Networks, others promote that 5G interferes with atmospheric oxygen and therefore causes Covid-19 pulmonary symptoms. On an even greater extreme, there are sinister narratives about a Machiavellian Bill Gates desiring to depopulate the planet with the synergistic use of vaccines, 5G, and the Coronavirus—or control the world’s population with vaccine-delivered, digitally-based, implanted microchips in people around the world. Still, others suggest it was a deep state American plot to undermine former President Donald Trump and was led by the cabal from which Dr. Fauci, a preeminent public health official, is a member of. Even further, the Covid-19 pandemic has been blamed on an invisible global elite—similar, if not identical to, the Illuminati—seeking to extinguish human liberties and destroy democracy.

**Why the Emergence of Conspiracies Around Infectious Disease?**

By now, one can completely disabuse the notion that conspiracies theories are merely contemporary, 20th and 21st century phenomena or even unique features of any given region, country, political party, or ideological frame. Instead, the said pandemics should illustrate the similarities of conspiratorial thinking regarding infectious disease across time and space. The parallels we see with Ebola, HIV/AIDS, and
Covid-19 can likely be generalized to many pandemics the world has faced or will face: the pervasive proclivities to deny the existence of lethal diseases at their outset, if not their entire lifespan; the pertinacious strains of scepticism and paranoia against governments, scientific institutions, and pharmaceutical companies; and the deep-seated fears of surreptitious, genocidal operations against racialized and sexualized minorities or the societally disadvantaged. Hence, the resurfacing and revivifying of conspiracy themes during epidemics and pandemics are not necessarily the mere result of ignorance, naivete, or fanaticism run amok. Regardless of how nonsensical and non-sequitur they may appear at first blush, these narratives are actually the result of a complex intersection of anxieties spanning the historical and contemporary, the socio-political and psychological, as well as the informational and mythological.

For instance, while it may initially seem outlandish to believe in government-led genocide in terms of Ebola, HIV/AIDS, and Covid-19, there are nonetheless historical specters that may caution otherwise. In fact, conspiratorial fears of extermination are rooted in past acts of explicit or implicit extermination efforts by a government or an enemy, local or abroad. For instance, the Siege of Fort Pitt in 1763 in Pittsburgh, Pennsylvania is a notorious exemplar in which the British used biological warfare, in the form of gifted blankets laced with smallpox disease, against Indigenous Americans as a deliberate means of deracination. In 1900, the Bubonic Plague was used to extirpate Black African politicians in Cape Town, South Africa, and was even legally upheld by apartheid segregationist laws. In the last years of South African apartheid in the late 1980s and 1990s, it was discovered that apartheid government laboratories had been weaponizing biological and chemical agents (e.g., anthrax) to use against Black African leaders. From the 1930s and 1970s, the Tuskegee Study was conducted with 600 Black Americans, in which participants remained oblivious of their syphilis diagnosis. Within this observational study, experimenters actively followed participants, refusing to treat them for devitalizing syphilitic disease, actively denying them known medical treatments, and allowing participant’s family members to contract the disease. Since the original time of enslavement to the mid-20th century, real medical exploitation has occurred on Black Americans: freshly buried Black bodies were exhumed for autopsies and wanton experimentation by the first medical colleges in the U.S., and enslaved Black women underwent unsolicited medical examination and intervention for the sake of advancing American gynecological and obstetrical methods by the father of American gynecology, Dr. James Sims. Similarly, Brazilians remember over a century of traumatizing experimentation conducted by American experimenters. Thus, a legacy of distrust collides with the emergence of any infectious disease in Brazil, such as the Chikungunya or Zika viruses in 2013 and 2015, respectively.

When countries are politically polarized, conspiratorial narratives and misinformation campaigns can often manifest. As has been strikingly evident during the Covid-19 pandemic, the tense political climate between liberals and conservatives has helped advance distrust in the origins of Covid-19, as well as the proposed methods to contain or eradicate it. For instance, conspiracies of endangered political freedoms have emerged most strongly from right-wingers in their objection to mask-wearing. A political schism arose, in which a large percentage of Trump supporters denied the existence of the disease or the efficacy of Covid-19 vaccines, while Biden supporters fully believed in the disease and vaccines created by Pfizer and Moderna. According to Dr. Tejan, the highly politicized climate between the two ruling political parties in Sierra Leone contributed to the growth of Ebola conspiracies, as the underdog party accused the ruling party of creating Ebola “to kill off the other”. In 2016, a highly politicized—and social media amplified—narrative raced through the Philippines after the Sanofi-designed Dengvaxia (e.g., dengue vaccine) resulted in severe and fatal dengue for several children. Ultimately, the vaccine license was revoked, criminal charges and investigations were triggered against government officials, and lawsuits were filed against Sanofi.

Conspiratorial narratives have also gained traction through the use of scapegoating and hostility toward one’s political, social, and cultural opponents. When syphilis was discovered in Europe in the 1390s, it’s mere existence was shrouded in xenophobic language, as it was given multiple names depending on the location (e.g., “French Sickness” in Germany, “German Sickness” in Poland, “Disease of the Christians” in Turkey, “Disease of the Turks” in Persia, “Polish Sickness” in Russia). As seen with Operation Infektion, the conspiracy of HIV/AIDS as a U.S.-invented genocidal machination was promulgated by the Russians to stir up anti-American sentiment and resentment. Even the belief that the Covid-19 virus was designed as a bioweapon by China was deemed plausible by a wide swathe of Americans, as it fed into the current context of geopolitical tensions between the U.S. and China. Moreover, throughout the U.S. and Great Britain, the thousands of verbally and physically abusive incidents against Asian-appearing people that have occurred since March 2020 demonstrate conspiracy-via-scapegoating in action.

A prevailing distrust in science, information, and information channels have also fomented conspiracies surrounding infectious disease. For instance, anti-science skepticism—tinged with entrenched partisanship—has been at its height during the Covid-19 pandemic, especially as vaccine hesitancy and vaccine refusal have mounted. Between January and March 2020, the Vaccine Confidence Project captured over 240 million digital and social media messages, with an average of 3.08 million messages a day, related to Covid-19; many of them contained disinformation and misinformation. On Twitter alone, there were 113 million Covid-19 commentaries, many of which were speculative, outright false claims, or downright dangerous. In the fall of 2020, a YouTube video promoting conspiracy theories that the first Covid-19 vaccines “would kill millions” received 8 million views before it was deleted, despite peer-reviewed evidence and FDA approval of the vaccines. While not necessarily inventing them, social media, or the “information petri dish of conspiracy”, has appreciably contributed to the rapid propagation of “half-true facts, decontextualized narratives, and false beliefs”
surrounding Covid-19. And these social media-driven, conspiratorial dynamics have veritable consequences: with the narrative that 5G was causing illness and weakening immune systems, attacks on telecommunications infrastructure and personnel in the U.K. increased. Employees of telecommunications groups have been violently targeted as they have been branded “criminals” and genocidists.

However, conspiracies around infectious disease—like those surrounding movie stars, space missions, or historical figures—are underpinned by a quintessential human psychology and sociology. Firstly, there is a need to overcome a sense of powerlessness brought on by the appreciable threat of the pandemic. Ebola, HIV/AIDS, and Covid-19 have all been terrifying and paralyzing pandemics before the emergence of treatments or vaccinations; however, some people may regain their sense of equilibrium if they just deny the pandemic’s existence. Secondly, conspiracies can allow individuals to cope with threat—would someone rather believe in an invisible and intangible and deadly virus, versus believe in a political, scientific, or pharmaceutical conspiracy to control individual freedoms and corral profit? Thirdly, infectious disease conspiracies can be a way to dispute mainstream politics. As we have seen in the U.S., those with the greatest political enchantment with former President Donald Trump are likely to endorse conspiracy theories surrounding Covid-19 since Trump endorsed non-mainstream opinions about the pandemic.

**How Conspiracies and Misinformation Campaigns Perpetuate Pandemics and Epidemics**

So why should public health officials acquaint themselves with conspiracy narratives—as opposed to dismissing, denying, or denigrating them? For this very simple reason: *conspiracies perpetuate epidemics and pandemics*. Beyond a disease’s innate infectiousness and transmissibility, conspiracies, misinformation, and disinformation—all acts of informational warfare—prolong and exacerbate the devastation of any given disease. This is accomplished via the following mechanisms: (a) increased local, regional, geographical spread; (b) heightened number of infected and dead persons; (c) augmented amount of time, money, and labor spent on mitigation efforts by public health officials and responders; (d) undermined community cooperation; (e) hesitancy towards and rejection of vaccines and treatments; (f) non-adherence to safety practices; and (g) antagonism toward healthcare providers.

**Perpetuation via increased local, regional, geographical spread**

As one scholar accurately claimed, “In no small part [is] Ebola transmitted directly through myth and fear”. When many individuals in Sierra Leone, Guinea, and Liberia experienced the fear of Ebola as a scheme to harvest their organs or kill them off, many of them fled into the forests or hid in their homes or concealed their dying family members. As Dr. Tejan noted, “the more [people] were hiding, the more they were dying”. Fleeing diseased individuals were partially responsible for carrying Ebola from one neighbouring country to another in Western Africa in 2014. The local’s failure to acknowledge the disease partially allowed the initial Ebola outbreaks in 2014 in Sierra Leone, Guinea, and Liberia to rage on for years. During the Covid-19 pandemic, many individuals who disbelieved in the virus or discounted its significance continued to congregate in large social gatherings or travel during holidays, exacerbating the numbers of infected people and helping to proliferate the number of viral variants.

**Perpetuation via increased number infected and dead**

With increased local and geographical spread, there is invariably increased infectivity, mortality, and morbidity from the pandemics. As of mid-December, the Center for Disease Control and Prevention had a total number of U.S. Covid-19 cases enumerated at 16,519,668, with an average of 64.6 daily cases. As of now, total deaths are exceeding 500,000. Undoubtedly, conspiratorial beliefs about Covid-19’s non-existence contributed to these burgeoning numbers. Within a span of a year, within 2014, the Ebola Zaire virus had accumulated 2,597 cases and 1,607 deaths in Sierra Leone (62% fatality rate); 9,004 cases and 2,582 deaths in Sierra Leone (29% fatality rate); and 7,862 cases and 3,384 deaths in Liberia (43% fatality rate). Overall, the World Health Organization estimated 17,942 confirmed, probable, and suspected Ebola cases, including 6,388 deaths and a fatality rate of 36% in Western Africa in 2014 alone. Inarguably, aforementioned conspiracy theories played a role in the infection and fatality rates.

As more people became infected with Ebola or Covid-19, the greater their likelihood of developing long-term consequences of illness. In the 2014-2016 Ebola epidemic in Western Africa, Ebola survivors suffered from ongoing visual disturbances, chronic pain, disabilities, and mental health issues. For some survivors of Covid-19, there is the existence of “long-Covid”, or a post-viral syndrome reckoned to myalgic encephalomyelitis; it manifests in a variety of ways, affecting cardiopulmonary function (e.g., interstitial thickening, myocarditis), neurologic function (anosmia and ageusia) and cognitive conditions (seizures and brain fog), and mental health (e.g., greater risk of depression, anxiety, post-traumatic stress disorder, substance use disorder). Ultimately, this only feeds the amount of time, money, and labor spent on mitigation and eradication efforts of any given pandemic.
In Sierra Leone during the 2014 Ebola outbreak, many people continued their traditional practices of washing and cleaning the dead, even amongst the infected bodies, despite what they were told by medical personnel. “It spread so bad because of all the washing and cleaning of the dead,” Dr. Tejan noted. In Guinea during the same time period, several residents murdered relief workers and doctors due to their overriding, conspiratorial suspicions. With the Covid-19 pandemic, conspiracies have helped to spread hostility and violence toward government, public health officials, and essential workers. Some U.S. health officials have had to resign due to death threats received because they ordered face masks or made high-profile statements about the pandemic. In Libya, health care facilities assisting during the Covid-19 pandemic were bombarded and destroyed, thereby reducing the pandemic preparedness and responsiveness of health care agencies. In 2016, a series of memes amplifying unsubstantiated death tolls from the dengue vaccine in the Philippines were rampant, as were highly sensationalized stories of wide-spread governmental corruption and cover-ups.

Perpetuation via hesitancy towards and rejection of treatment

Because of the promulgations made by President Mbeki about the suspiciousness of antiretrovirals—and his recommendations for treatment with herbal remedies—hundreds of thousands of South Africans died because of their refusal of antiretrovirals. In the midst of the dengue vaccine crisis in the Philippines, trust in vaccines dropped precipitously, and some scholars surmise that a spike in Measles and Polio in the country within the last two years was the inevitable result. Despite having a higher likelihood of getting Covid-19, Black Americans have been less likely to want to get the Covid-19 vaccine relative to White Americans, often citing statements like “I firmly believe that the [Covid-19 vaccine] is another Tuskegee Experiment”, “We are the ones who are the guinea pigs for the rich”, and “The more they study me, the more they know how to get rid of me”.31

Fighting the deluge of conspiracy and misinformation campaigns

Thus, the ongoing discourse about conspiracy theories surrounding pandemics should be enlightening and empowering. Instead of meeting conspiratorial narratives with a knee-jerk reaction of derision, apathy, cynicism, dismissiveness, or fatigue, they can be met with understanding, preparedness, compassion, and confidence. Conspiracies and their containment (or lack thereof) are highly consequential. If we fail to acknowledge the historical, political, social, and cultural anxieties that play into the manifestation of infodemics, then we fail to comprehensively address any given pandemic. As a public health or clinical professional intent on fighting any pandemic, there are some tools that may be helpful. Firstly, pre-bunking (warning of an impending threat of being misled by informational distortions) and de-bunking (directly addressing specious, pandemic-related information) have been promising in other endeavors. When pre-bunking and de-bunking are combined with facts and logic, they are even more powerful. For instance, highlighting that vaccination research is conducted by independent, publicly-funded scientists, as opposed to privately-funded or pharmaceutically-funded, can work against some accusational conspiracies against the pharmaceutical industry. In March 2020, Facebook, Google, LinkedIn, Microsoft, Reddit, Twitter, and YouTube combined efforts to fight against Covid-19 misinformation by removing tweets that carried scientifically false information. Similarly, the UK government and World Health Organization have launched collaborative campaigns to “Stop the Spread” to raise awareness about the dangers of misinformation. Yet, complications can emerge if pre-bunking and de-bunking transform into unregulated censorship. As Larson points out, entirely repressing conspiratorial narratives or deliberating espousing falsely reassuring misinformation may backfire: agencies and governments can undermine their own credibility and unintentionally worsen damaging conspiratorial narratives.

Community participation during pandemics may also be a vital linchpin for public health practitioners. In the Ebola outbreak of 2014-2016 in Sierra Leone, Guinea, and Liberia, the conspiratorial tides began to shift once health care providers in the ETCs worked with families to understand the purpose of not washing the infected dead as a way of survival. Once they communicated genuine concern and made deliberate efforts to work with the traditional African burial practices, public health providers began to make significant progress in the eradication of the outbreak. In 2009, amid the H1N1 flu pandemic, the Center for Disease Control collaboratively engaged and communicated with the Somali immigrant community, which helped to assuage some of the community’s fears about the flu vaccine; vaccine hesitancy dropped dramatically as a result. As Covid-19 vaccines become available, the National Medical Association, which represents Black American physicians and Black patients, has taken an active role to establish a task force to review vaccine trial findings and “bridge communications to the Black community” from the medical and public health communities.

Conclusion

When public health officials, disaster responders, medical personnel go into a disaster or pandemic, they are often setting up incident command centers; (re) establishing communication and transportation lines; erecting temporizing shelter and medical facilities; obtaining aerial footage of the devastation; obtaining water/electricity resources or substitutes; and replacing or bolstering damaged
infrastructure. Yet, what every infectious disease responder should include in their armamentarium is a pre-assessment of the historical, political, social, and cultural landscape under which they are operating. Just as public health practitioners ready themselves for the emergence of an evolving disaster, so too must they be poised for the inevitable conspiracies that will take root.

Contributions by Dr. Tejan, an orthopedic trauma surgeon at Valley Baptist Hospital in Texas.

References


