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Disentangling COVID-19 vaccine hesitancy: the role of social imaginaries of epidemics in northern Sierra Leone

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ABSTRACT

The WHO identified vaccine hesitancy as a threat to global health in 2019, but it was the COVID-19 pandemic that brought it to the fore of public discussions. Despite efforts to account for context in public health frameworks, these fail to translate into analyses that meaningfully capture the local dynamics forging vaccine hesitancy, while dominant public narratives continue to offer decontextualized and monolithic portrayals of this multifaceted phenomenon. Drawing on ethnographic insights from fieldwork conducted in northern Sierra Leone, we propose the notion of 'social imaginaries of epidemics' as a socio-historical lens through which to understand how people made sense of the COVID-19 pandemic and the ensuing response, thereby disentangling the shared meanings that enabled vaccine hesitancy in this setting. We do this by reconstructing three key narratives that shaped how COVID-19 was being socially imagined: epidemic memories, mistrust in the governance of epidemics, and diverging health priorities. The social imaginary of COVID-19 as a disease that was 'deadly', 'harmless', 'invisible' or 'fake' continuously shifted, yet always in dialogue with shared memories of the last Ebola epidemic. The social imaginary of the COVID-19 response was shaped by existing mistrust in the state's governance of epidemics, whereby the response was underfunded or weak as the result of the government 'eating COVID money' or pursuing electoral advantages. The immunisation response was socially imagined as responding to foreign instead of local priorities by disregarding food insecurity in favour of vaccines. Together, this social imaginary rendered COVID-19 vaccines useless, harmful or unimportant to many.

1. Introduction

In early May 2023, the Director-General of the World Health Organization (WHO), Tedros Adhanom Ghebreyesus, officially announced the end of the Public Health Emergency of International Concern posed by the COVID-19 pandemic.[1] Despite this, the COVID-19 pandemic has exerted a significant and lasting impact on various facets of global society, leaving traces across health, economic, political, and social spheres (Alizadeh et al., 2023; Larsen et al., 2023).

The COVID-19 pandemic revealed vulnerabilities in healthcare systems worldwide, even challenging popular Western assumptions about the limited health sovereignty and weaknesses of Global South countries to deal with health crises and disease threats (Shepler, 2017). At the same time, the pandemic unequivocally underscored persistent inequalities between the Global North and the Global South. Notably, the WHO aimed for all countries to achieve a 70 % full vaccination rate by mid-2022, yet, by the end of 2021, only seven African countries had met a 40 % target, representing just 13 % of African nations. This stands in sharp contrast to the nearly 90 % rate observed in high-income countries (HICs) (Wariri et al., 2023). It must be noted, though, that

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[1] WHO chief declares end to COVID-19 as a global health emergency (https://news.un.org/en/story/2023/05/1136367, accessed on the 28th February 2025).

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as of January 2025, Africa CDC data show that only fourteen African countries have surpassed this target.[2]

Vaccine supply was at the core of the public debate regarding inequities in global health throughout the pandemic (Leach et al., 2022). This was evidenced by the fact that access to the newly developed vaccines against COVID-19 was mainly concentrated in Western countries, which predominantly led clinical research and vaccine production, leading to accusations of hoarding vaccines (Ferranna, 2023). The attempts to facilitate and accelerate access to COVID-19 vaccines in low and middle-income countries (LMIC) through financing initiatives like COVAX revealed several challenges, such as the short shelf-life of vaccines and delays in funding for national roll-out, among others (Teerawattananon et al., 2022; Usher, 2021).

In addition to vaccine supply challenges, the COVID-19 pandemic also resurfaced debates around vaccine hesitancy (and its counterpart, 'confidence'). Defined by the WHO as the "delay in acceptance or refusal of vaccines despite availability of vaccine services" (MacDonald et al., 2015), vaccine hesitancy has often been identified as one of the drivers of low COVID-19 vaccination rates in African countries, suggesting that the stark disparities in coverage may not only be explained by supply factors (Prata Menezes et al., 2021). Moreover, in an interconnected, digitized global space, the pandemic also triggered the circulation of mis/disinformation and the concept of "infodemia" (Rathje et al., 2022) emerged as a key public health concern, eroding public trust in government, health authorities, and the scientific community. The rise of the anti-vaccine movement (Johnson et al., 2020), fueled by concerns over the sudden and rapid mass production of vaccines against COVID-19, challenged their introduction and roll-out while being simultaneously the most hoped-for health technology in the pandemic response toolkit (Grossman, 2021).

Furthermore, the disruption caused by the COVID-19 pandemic significantly impacted routine immunization programs, particularly in LMIC, resulting in a decline in the coverage of essential vaccines (Basu et al., 2023) and the delivery of other essential health services (Shapira et al., 2021). For example, the global DPT3 coverage -used to evaluate the strength of national immunization systems due to the requirement of three separate interactions with the healthcare system-markedly worsened since the onset of the COVID-19 pandemic, affecting numerous countries, particularly LMIC (Eagan et al., 2023). Although there is evidence of recovery rates in overall vaccine coverage, vaccine hesitancy seems to persist (Basu et al., 2023). While supply-side disruptions, such as lockdown measures and resource allocations, undoubtedly contributed to these drops in vaccine coverage, emerging evidence indicates that demand-side barriers, particularly confidence in vaccines, were also adversely affected by the pandemic (Eagan et al., 2023).

1.1. Revisiting vaccine hesitancy

The phenomenon of vaccine hesitancy has gained significant attention since the onset of the COVID-19 pandemic, with numerous efforts aimed at understanding and addressing this issue, particularly in regions where vaccines are accessible (Solís Arce et al., 2021). Yet, vaccine confidence issues are as old as vaccines (Allen & Fitzpatrick, 2007). 19th-century Britain already saw the emergence of an anti-vaccine movement against smallpox immunization campaigns (Eagan et al., 2023). The recognition of vaccine hesitancy as an emerging global threat in 2019 by the WHO, prior to the unfolding of the COVID-19 pandemic, further underscored its importance and urgency in the global health agenda (Larson et al., 2022).

The WHO definition of vaccine hesitancy states that it is 'complex and context-specific' (MacDonald et al., 2015). Building on this, the WHO Strategic Advisory Group for Emergencies (WHO SAGE) Working Group on Vaccine Hesitancy emphasizes that "vaccine hesitancy varies across time, place, and vaccines" (World Health Organization, 2014). Other works characterise vaccine hesitancy as an attitude, a behaviour, or even a decision-making process influenced by various contextual factors (Peretti-Watel et al., 2015). Others conceive it as "a state of indecision and uncertainty that precedes a decision to become (or not become) vaccinated" reasoning that "vaccine hesitancy is an attitude or sentiment, whereas vaccination is an action" (Larson et al., 2022).

Attempts to define vaccine hesitancy also seek to determine the various factors influencing vaccine behaviour. The WHO SAGE introduced the 3Cs model to analyse factors influencing vaccine uptake: complacency (the lack of perceived necessity for vaccination), convenience (practical barriers hindering access to immunization services), and confidence (related to trust in vaccine safety and efficacy) (MacDonald et al., 2015; World Health Organization, 2014). A broader framework known as the 5As was proposed to encompass factors affecting vaccine uptake, which included the dimensions of access, affordability, awareness, acceptance, and activation (Thomson et al., 2016). A revised version of the 3Cs model, known as the 5Cs model, incorporates additional factors such as constraints (replacing convenience), risk calculation, and collective responsibility (Betsch et al., 2018). It is noteworthy that survey data from low- and middle-income countries validating these models was scarce (Nuwarda et al., 2022).

Reasons to hesitate are complex. Public health studies conducted in high-income countries (HIC) often cite concerns about vaccine safety and efficacy, while those on LMICs highlight cultural beliefs, negative experiences, and healthcare system challenges (ibid). Common factors are reported to include distrust of pharmaceutical companies and government, belief in conspiracy theories, and social media misinformation (ibid). Despite the stated efforts to account for 'context' in public health frameworks, these generally translate into explanations of hesitancy that foreground individual-level factors and where the role of social, political and historical contexts remains elusive at best (Azak & Wigen, 2022; Gerretsen et al., 2021). As a result, the dominant narrative, both in the media and public health fora, continues to interpret hesitancy as the result of misinformation, non-scientific beliefs, or a knowledge deficit (Enria et al., 2021; Vanderslott et al., 2022). If we understand *context* as an analytical tool that generates knowledge that is "socially and historically situated" (Dilley, 2002), standard approaches to hesitancy appear to only offer decontextualized analyses that lack depth and fail to capture its complex and localised nature.

Based on an expanded version of Leach and Fairhead's 2012 framework (Leach & Fairhead, 2012), Leach et al. (2022) proposed the vaccine anxiety framework in an attempt to transcend the vaccine hesitancy/confidence binary, acknowledging both desires for and concerns about vaccines, which are shaped by bodily, societal, and political understandings and experiences (ibid.). Building on this framework, Mylan (2024) added a spiritual and religious dimension in her analysis of COVID-19 vaccine uptake in an Ugandan refugee setting, while highlighting its biopolitical framing. Additionally, the Behavioural and Social Drivers (BeSD) vaccination model, developed by the WHO, UNICEF, and partners, also considers social processes as one of the key dimensions to understanding drivers of vaccine uptake, together with cognitive and emotional aspects, individual motivation, and practical considerations (World Health Organization, 2022).

These efforts seek to challenge dominant discourses that oversimplify the phenomenon of vaccine hesitancy. Our research is part of these efforts and as such contributes to the anthropological literature that has sought to problematise given understandings of vaccine hesitancy (Enria et al., 2021; Leach & Fairhead, 2012; Vanderslott et al., 2022) by attending to nuance and doing so from diverse settings, including those that tend to be under-researched. Our analysis considers the role of memory, socially-shared meanings, and values, drawing on the concept of social imaginaries (Taylor, 2002) to disentangle how hesitancy towards COVID-19 vaccines took form in the context of northern Sierra Leone. We situate our analysis as acknowledging and

[2] Africa CDC. COVID-19 Vaccination. https://africacdc.org/covid-19-vaccination/.

complementing, rather than contrasting or substituting, recent ethnographic work on social responses to the COVID-19 pandemic in Sierra Leone (James et al., 2023; Lees et al., 2023; MacGregor et al., 2022; McLean, 2024; Richards et al., 2024). We also acknowledge other works specifically dealing with attitudes towards COVID-19 vaccines in Sierra Leone, most of which have focused on contemporary dynamics (Leach et al., 2022). With this paper we are thus making an empirical contribution to debates around the social embeddedness of vaccine hesitancy, while simultaneously expanding the theoretical toolkit that supports these analyses by introducing the concept of 'social imaginaries' as a complementary heuristic device.

As Taylor (2002) put it, a social imaginary "is not a set of ideas; rather it is what enables, through making sense of, the practices of a society". We use the concept to engage with our ethnographic material to analyse how people in this setting related to the COVID-19 pandemic and engaged with the ensuing vaccination campaigns as more than a list of individual and separate 'perceptions', 'views' and 'attitudes'. Instead, we take these to form part of social imaginaries, understood here as "perpetually unstable constellations of meaning" that are "built upon implicit understandings that underlie and make possible common practices" and that are located in a "fluid middle ground between embodied practices and explicit doctrines" (Gaonkar, 2002). Importantly, because imaginaries are not temporally bounded, we are able to analyse how COVID-19 is socially imagined without disassembling the present from the past. As we will show in our analysis, the epidemiological past bears extraordinary force in Sierra Leone.

1.2. The study in context

By the end of 2021, studies seeking to quantify and explain hesitancy towards COVID-19 vaccines in HIC abounded (Solís Arce et al., 2021). Yet as COVID-19 vaccines started to arrive in low-income countries, little was known about these populations' attitudes towards these novel vaccines and what their reception and response would be like. The disruptive impact of the pandemic on the delivery of child immunization programs was by then well documented (Shapira et al., 2021), and evidence on the role that demand-side factors (such as fears of infection through contact with healthcare facilities) played was starting to emerge. Amidst such unfolding (un)certainties, understanding whether vaccine hesitancy would also play a role in low-resourced (and lesser researched) settings during the rollout of COVID-19 vaccines, how this would manifest (if at all) in specific localities, and its relation to the delivery of critical routine health services acquired urgency.

In northern Sierra Leone, these concerns were raised by staff of the ICARIA project as well as by healthcare staff of the health facilities where the project was being implemented since April 2019. The ICARIA project[3] is a clinical trial seeking to evaluate the impact on infant mortality of administering azithromycin (an antibiotic) together with sulfadoxine-pyrimethamine (an antimalarial) to infants during routine vaccination visits. The trial is being carried out in several health facilities in the northern districts of Bombali, Tonkolili, and Port Loko. Recruitment of trial participants began as the first COVID-19 vaccines entered the country, although rollout to the districts took a few months to materialize. Soon after, staff began to raise concerns over the impact that fears around COVID-19 vaccines may be having on child immunization uptake, suggesting that vaccine hesitancy could be deterring caretakers from approaching healthcare facilities. As social scientists collaborating closely with the ICARIA project, we not only sought to respond to, and shed some light into, these initial perceptions and impressions, but also to address the aforementioned gap in the research landscape on COVID-19 vaccine hesitancy and confidence in low-income countries.

[3] ICARIA. Improving Care through Azithromycin Research for Infants in Africa (*Webpage removed to ensure anonymization*).

The dialogue with the ICARIA project staff led us to formulate the research questions that guided the IPERVAC (Impact of PERceptions of COVID-19 VACcines on health-seeking behaviors) study. The IPERVAC study sought to explore COVID-19 vaccine hesitancy as it unfolded in northern Sierra Leone through a context-sensitive analysis that would situate public attitudes towards vaccines within existing social dynamics.

1.3. Sierra Leone amidst (another) health emergency

On the 24th of March 2, 020[4] Sierra Leone declared a year-long state of emergency before the first positive case of COVID-19 was detected in the country on the 30th of March. In his speech[5] President Julius Maada Bio drew repeated parallels between COVID-19 and Ebola to underscore the severity of the crisis that was at the country's doorstep. This preemptive act involved the closure of borders, screening and quarantine of incoming international passengers, closure of religious and educational centers and the reactivation of the national emergency response center established during the 2014–16 Ebola epidemic, now renamed NACOVERC - National COVID-19 Emergency Response Centre.

The government imposed a series of national lockdowns and inter-district mobility restrictions throughout 2020. This resulted in disruptions in health service provision, schooling, trade, and commercial activity, to name a few sectors. Losses in household income coupled with increases in food prices led to a rise in food insecurity that continued to be documented at later stages of the pandemic, when domestic epidemic control measures were no longer in place (WFP-Sierra Leone Country Office, 2022; World Bank Group Sierra Leone, 2021). The severity of the socioeconomic impact of the COVID-19 pandemic, be it the result of domestic containment measures or the effects of the global pandemic as they manifested locally, cannot be overstated.

These measures were laid down on a country already characterized by 'intersecting precarities' (MacGregor et al., 2022). One of the precarities intersecting Sierra Leonean life is that of its frail healthcare system, recently ravaged by the Ebola epidemic (Elston et al., 2016). The West African Ebola epidemic erupted in 2014 in Guinea, from where it quickly spread to neighbouring countries, Liberia and Sierra Leone. This was the largest and deadliest Ebola outbreak ever recorded, leaving an unprecedented mark on Sierra Leone's health system with the death of approximately 7 % of its workforce (Evans et al., 2015). In this case too, the severity of the impact of this epidemic cannot be overstated.

Unlike the Ebola epidemic, the global response to the COVID-19 pandemic led to the rapid development of vaccines that, in spite of wealthy nations' hoarding of stocks, were introduced in Sierra Leone by March 15th, 2021, only a year after the detection of the first case (Bilkis, 2021). Yet unlike the rollout of virus containment measures at the onset of the outbreak, the rollout of COVID-19 vaccines was slow, largely due to supply and deployment issues. The vaccination campaign was launched by the president of Sierra Leone, who received the first shot

[4] Declaration of a State of Public Emergency by His Excellency, Dr. Julius Maada Bio, President of the Republic of Sierra Leone. Freetown, Sierra Leone – 24 March 2020 (https://www.afro.who.int/sites/default/files/2020-03/Declaration%20of%20a%20State%20of%20Public%20Emergency%20by%20His%20Excellency%2C%20Dr.%20Julius%20Maada%20Bio%2C%20President%20of%20the%20Republic%20of%20Sierra%20Leone.%20Freetown%2C%20Sierra%20Leone%20%E2%80%93%2024%20March%202020.pdf, accessed on the 24th February 2025).

[5] Address to the nation by His Excellency Dr Julius Maada Bio President of the Republic of Sierra Leone on Enhanced Public Health and Safety Measures to Prevent COVID-19 (https://www.afro.who.int/sites/default/files/2020-03/Adress%20to%20the%20nation%20by%20His%20Excellency%20Dr%20Julius%20Maada%20Bio%20President%20of%20the%20Republic%20of%20Sierra%20Leone%20on%20Enhanced%20Public%20Health%20and%20Safety%20Measures%20to%20Prevent%20COVID-19.pdf, accessed on the 24th February 2025.).

alongside other prominent senior citizens, government officials, and partners to encourage public support for vaccination .[6]

The Ministry of Health and Sanitation (MoHS) conducted an intensified vaccination campaign, starting in October 2021 to increase vaccination coverage. Vaccination sites were initially limited to district headquarters, and were then extended to the chiefdom level with additional mobile vaccination teams. The MoHS also intensified social mobilization and community engagement efforts by significantly increasing the number of vaccination sites and the expansion of mobile vaccination teams across districts to reach people in hard-to-reach and remote areas (World Bank Group Sierra Leone, 2021). Moreover, vaccination in Sierra Leone was voluntary, with prioritization focused on high-risk groups.[7] The COVID-19 vaccination strategy in Sierra Leone involved the use of two key deployment channels: 1) the Expanded Programme for Immunization's (EPI) routine facility-based and outreach services, and 2) periodic 'surges' (dependent on fluctuating vaccine stocks). Despite these efforts, by March 2022, one year after the first batches of COVID-19 vaccines arrived in the country, only 14 % of the population had been fully vaccinated.[8]

2. Methods

In this article we present the findings drawn from fieldwork carried out between May and August 2022 in the districts of Port Loko and Bombali in northern Sierra Leone. These sites were selected to leverage existing resources belonging to the ICARIA project, wherein the research team was already embedded. Our in-country research team was composed of four research assistants and one field coordinator. Two study coordinators were based in Spain, from where they provided remote support to the in-country research team. The methodological approach was informed by anthropological research methods and, as such, placed emphasis on ethnographic observations, field notes, and informal conversations as key sources of insight. Other qualitative methods were used, such as audio-recorded in-depth interviews (IDIs), focus group discussions (FGDs), and media screening.

Ethnographic fieldwork started after a scoping phase (Arksey & O'Malley, 2005), integrating both desk-based and field-based activities. The latter encompassed a contextual assessment of the study sites and two scoping workshops involving key community stakeholders involved in the COVID-19 response and vaccination efforts, such as local chiefs, religious leaders, traditional healers, chairpersons from relevant civil society organizations, and media representatives, both male and female. The scoping phase was aimed at refining research questions, field guides and data collection tools. Moreover, this participatory approach fostered the engagement of these community stakeholders in methodological decisions. This collaborative process not only facilitated community entry but also optimized various fieldwork processes, including participant selection, delimitation of topics to be covered during data collection, and the identification of preferred channels for disseminating study results.

We conducted a total of 50 IDIs and 10 FGDs with different population groups residing and working in the study sites. To ensure balanced representation across the study areas, IDIs and FGDs were purposely split equally between the two districts, with 25 IDIs and 5 FGDs conducted in each district. The layperson group comprised caretakers of children under five years of age, and community leaders, including religious and traditional authorities like Paramount Chiefs and Mammy Queens. The healthcare worker group included providers at EPI services and those involved in administering COVID-19 vaccines. It also involved other community-based healthcare providers, like community health workers (CHWs). Interviews and FGDs were conducted in Krio or Temne and digitally recorded after obtaining written informed consent. Audios were translated into English and transcribed verbatim. All names and other potential identifiers in the transcripts were deleted to guarantee subject anonymity.

Research assistants performed non-participant observations of several events and scenarios that were identified as relevant to the study during the scoping phase. This included sensitization sessions and routine vaccination at health centers, as well as mobile outreach vaccination implemented by the EPI; specific COVID-19 vaccination campaigns (locally referred to as 'surges' among public health managers); and social gathering spaces such as *Ataya bases* (tea houses), *Poyo* bars (palm wine drinking points), and *Okada* parks (motorbike parking), as relevant points for social interaction, circulation of public information, and collective discussions on social and political issues. A total of 45 events were observed. Research assistants took field notes in templates that combined thematically structured and open sections designed to capture their descriptions and reflections, as well as key insights from informal conversations.

During fieldwork, data collection integrated pre-analysis exercises. Research assistants developed summaries after each activity, synthesizing ideas and findings on key study themes, discussed in weekly team meetings. This process also identified emerging themes and potential adjustments to interview guides. Drawing from these exchanges, study coordinators established categories for coding transcriptions and other fieldwork materials using Atlas. ti, following a content analysis approach. The analysis of news media and social networks was conducted in parallel to support the interpretation of findings drawn from the ethnographic fieldwork.

3. Results and discussion

The social imaginary of epidemics provides us a framework through which we can understand COVID-19 vaccine hesitancy in Sierra Leone, drawing on historical, political, and social dimensions. By reconstructing three key emerging narratives—1) memories of past epidemics, 2) mistrust in state governance of epidemics, and 3) diverging health priorities—that both feed and form part of this imaginary, we show how these narratives inform how people made sense of the COVID-19 response and vaccines, ultimately influencing how vaccine hesitancy manifested in this setting. In the following section, we will describe and discuss these narratives with attention to ethnographic detail and show how articulating them with the social imaginary of epidemics helps us understand vaccine hesitancy in northern Sierra Leone.

3.1. Epidemic memories

As we began our fieldwork it soon became clear that when discussing how participants lived and understood the COVID-19 pandemic, it was inevitable to also discuss their memories of the last Ebola epidemic and, to a lesser degree, other epidemics and outbreaks.

> After all those diseases [*referring to other previous outbreaks such as chickenpox, smallpox, measles, and acute hemorrhagic conjunctivitis*], there comes the Ebola in this same country [*Sierra Leone*] and just after we were able to defeat the Ebola and here again Corona (FGD, CHWs, Port Loko).

Besides Ebola, participants referred to outbreaks of Lassa fever, Cholera, Measles, Polio, and even to the ongoing Anthrax outbreak

[6] Sierra Leone steps up countrywide COVID-19 vaccination (https://www.afro.who.int/news/sierra-leone-steps-countrywide-covid-19-vaccination, accessed on the 3rd of March 2025).

[7] Sierra Leone – COVAX Environmental and Social Management Framework (ESMF). Ministry of Health and Sanitation. Freetown, Sierra Leone – 22 June 2021 (https://mohs.gov.sl/wp-content/uploads/2021/06/SL_-COVAX-ESMF-Sierra-Leone-Final_June-22-2021-Updated.pdf, accessed on the 19th June 2025).

[8] Sierra Leone: the last mile of COVID-19 vaccine delivery (https://www.who.int/news-room/feature-stories/detail/sierra-leone–the-last-mile-of-covid-19-vaccine-delivery, accessed on the 24th February 2025).

affecting livestock in the district of Port Loko.[9] While recounting the numerous outbreaks and their accompanying containment measures, a feeling of what we refer to as 'epidemic fatigue' could be sensed from participants' accounts, where disease names, modes of transmission, symptoms, and containment measures were often conflated with one another. Rather than viewing these as misconceptions or misunderstandings of the aetiology of COVID-19, we interpret them as expressions of latent epidemic memories, where individuals, as *bricoleurs* in Lévi-Strauss' terms (Lévi-Strauss, 1966), reconfigure and assemble pre-existing meanings and pieces of knowledge in response to ongoing epidemiological challenges. Understandably, keeping an accurate record of multiple outbreaks in a continent where it is estimated that almost half of its countries are exposed to an epidemic annually (Talisuna et al., 2020) is a demanding task.

While discussions of infectious disease outbreaks were generally prompted by guided questions, discussions of the Ebola epidemic were introduced spontaneously by participants while narrating their experiences during the COVID-19 pandemic. Participants recounted how Sierra Leoneans' initial reactions to the news that the COVID-19 pandemic was finally reaching the country were marked by a heightened sense of threat inherited from their recent experiences with Ebola. For instance, fears of approaching health facilities were articulated in terms of the implications of testing positive which "during Ebola" meant they would be isolated and face a certain death. Due to Ebola's high fatality rate, health facilities came to symbolize[10] places of no return, a fear that re-emerged during "Corona time". Reflections on COVID-19 thus triggered a re-telling of traumatic stories of tragedy and loss, of repression and helplessness. Initially, people also assumed that the COVID-19 disease would be as severe as Ebola, or even deadlier, given how devastating they knew it had been in wealthier countries, how it had "been killing the white people".

As the months progressed, the perceived threat of COVID-19 gradually subsided as the anticipated contagion and deaths did not materialize. Throughout, memories of Ebola continued to inform how this experience was being socially imagined. While the socio-economic impact of the pandemic was undeniably palpable, the epidemiological impact was not. By the end of April 2022, at the onset of this study, Sierra Leone had reported a total of 7681 confirmed COVID-19 cases and 125 deaths, the vast majority (104) of which occurred in the Western Area district, which includes the capital, Freetown. In contrast, only 4 deaths were reported in Bombali and 2 in Port Loko.[11] This led to different ontological positions with regard to COVID-19 as it came to be described as "invisible" (it may exist but we have not seen it), "fake" (it is a lie and as such does not exist), or as a "Western" or "white people's" disease (it exists but it cannot affect black Africans). Similar understandings were captured by studies from other regions that have experienced Ebola epidemics, such as the Democratic Republic of Congo (DRC), where COVID-19 was often described as "empty," implying invisibility, or as a white man's disease (James et al., 2023).

These claims too were supported with comparisons to the undeniable visibility of Ebola infection - Ebola being 'really deadly' - and thus its comparative 'realness'. Of note, numerous anthropological insights from the Ebola epidemic report how Ebola too was deemed fake during its earlier phases (Wilkinson & Fairhead, 2017). Although this was omitted by many of the participants in our study, some did acknowledge that "there were a lot of denials during Ebola", highlighting how in the case of COVID-19 it was (at first) difficult to "deny it because we had the bitter experience from the Ebola", a school teacher in Bombali explained. However, as the COVID-19 pandemic evolved in Sierra Leone, it became apparent that "Corona was not like Ebola", thus following the reverse interpretive process (i.e. evolved from 'real' to 'fake').

The comparison with Ebola highlighted the epidemiological absence of COVID-19 in Sierra Leoneans' lives. In an attempt to explain the low number of cases, some participants also recurred to memories of the Ebola response. The notion that Sierra Leonean society and its health system had integrated lessons drawn from the Ebola response and subsequently implemented them during the COVID-19 response was mobilized by both lay persons and health professionals as an explanation. Participants recounted how "when Corona came, it was like a transfer of experience"[12] so the population already knew what outbreak containment measures were like and what complying with these would involve. Some healthcare professionals specifically referred to the "systems" that had been put in place during the Ebola epidemic that "made it easier for the COVID fight". It is important to note however that this appraisal of the population's and health system's 'preparedness' was only shared when seeking to explain why COVID-19 was so manifestly absent in Sierra Leone. Otherwise, discussions around the national COVID-19 response or the state of the healthcare services did not invoke such notions of preparedness and instead pointed at the precariousness of the latter and the use of excess force in the former. Nevertheless, a sense of "continuity in crisis" (James et al., 2023) can be discerned in both versions of the COVID-19 imaginary; a continuity between the Ebola and COVID-19 crises, either as a learned preparedness or a chronic precariousness.

COVID-19 vaccines arrived in Sierra Leone against this backdrop. Our study reveals that one of the key motivations driving the uptake of COVID-19 vaccines was the pragmatic value that obtaining the vaccination card had. Like in many pandemic settings where mobility restrictions were imposed, a card showing proof of vaccination was required to access certain spaces (usually institutional buildings) and to cross borders, albeit unevenly implemented. The vaccine itself was otherwise generally perceived to be unnecessary and study participants claimed that many did not adhere to receiving the second dose once they had obtained the card. The perceived fakeness and invisibility of COVID-19 thus translated into the perceived futility of vaccines against COVID-19. As a market woman put it, "Ah, they just say something is coming which I cannot see and I don't know how it affects and you expect me to go and take *marklate* [vaccine] for it? I will not go there nor will I take the *marklate*".[13]

3.2. Power and mistrust in the governance of epidemics

How the governance of COVID-19 was being socially imagined was also informed by people's experiences with state power stemming from the "Ebola times", as memories of the Ebola epidemic response were recurrently contrasted to the ongoing response to COVID-19. Yet just like in the case of the Ebola response, attitudes towards the government and experiences linked to the pandemic response ultimately reveal existing fractures in citizens' trust towards the state.

We regularly encountered the claim that the government's response during the Ebola epidemic involved greater efforts and investments compared to the COVID-19 response: "I don't think the government did much in the fight against corona compared to the Ebola fight".[14] For

[9] Sierra Leone reports first anthrax outbreak in 28 years (https://newscentral.africa/sierra-leone-records-first-anthrax-outbreak-in-28-years/, accessed on the 24th February of 2025).

[10] "During the Ebola you will be feeling malaria and when you go to the hospital they will tell you that you are Ebola positive and you will be left to perish and die" (IDI, Okada rider, Port Loko).

[11] Sierra Leone COVID-19 Situation Report #760. Ministry of Health and Sanitation/WHO Sierra Leone. Freetown, Sierra Leone – 29 April 2022. Available at: https://www.afro.who.int/sites/default/files/2022-05/Sierra%20Leone%20COVID-19%20Situation%20Report%20760%20_%2029%20April%202022.pdf, accessed on the 19th June 2025).

[12] FGD, Facility-based health provider, Port Loko.

[13] IDI, Market woman, Port Loko.

[14] FGD, Caretakers, Bombali.

some, the authorities' response to COVID-19, unlike that of Ebola, was perceived as inadequate and even negligent, given the limited delivery of goods and services that, in their view, should have been made available to address citizens' healthcare needs. As observed during certain outreach vaccination campaigns and discussions at *Ataya bases*, people often said that the Ebola response involved the distribution of medical kits, soap, buckets, hand sanitizers, and free food for those quarantined, provisions seemingly absent during the COVID-19 response: "the corona pandemic is very different because there is no care and concern for the people".[15] Additionally, there were concerns about the lack of adequate financial support (namely, unpaid salaries or risk allowances) for frontline primary healthcare workers actively involved in the COVID-19 response efforts, which also circulated through social media and led to some protests in the country.[16]

> The conditions … Ebola money was there (…), risk allowance was available (…) then at the end of the month they will pay you your own salary gain (…). So for the corona now, although, yes, we are available [and] they said all of us are at the risk side (…) but risk allowance is not available (IDI, Nurse, Port Loko).

The absence of epidemic-related entitlements led many to regard government institutions with scepticism, suspecting them of mismanagement and corruption. This suspicion extends to the allocation of international aid intended to support the outbreak response, with popular sentiment often accusing authorities of "eating the money": "The government should be tired now of eating the COVID money from the white people".[17] Similarly, James et al. (2023) reported on the common rhyme *"COVID est vide"* ("COVID is empty") that circulated in early 2021 around Goma (DRC). Beyond referring to the disease's invisibility (as already mentioned), it also seemed to allude to the political economy of the pandemic response in the DRC, symbolizing the drained state funds for COVID-19. Although the governance of the COVID-19 response was being imagined as underfunded and corrupt by contrast to the Ebola response, our interlocutors made no mention of comparable claims that were made throughout the Ebola response. Shepler (2017) already describes similar narratives circulating in Sierra Leone about 'Ebola money' and claims about international funding being a means of feeding the state (she even reports on the use of the same popular idiom "eating the money").[18]

These accounts of Sierra Leoneans' commentaries about the financing of the Ebola and COVID-19 responses reveal insights into their relationship with the state, highlighting how the state's perceived weakness is intertwined with the presence of international actors in a territory plagued by crises, including the civil war. This underscores the complex dynamics between the state and its citizens, shaped by collective memories of past epidemics and social representations of the state's "strategies of extraversion",[19] and that it is symbolized by what we have termed "epidemic money": a metaphor that reflects how Sierra Leonean citizens socially imagine the sovereignty and integrity of the state in handling public health emergencies.

We cannot however disregard the fact that our fieldwork was conducted in the northern regions of the country, known for being a stronghold of the opposition to the current government. Considering the regional characteristics of our field site, the narratives of mistrust towards the government appear to be embedded in partisan politics, particularly when examining claims of the current ruling party - the SLPP - bringing COVID-19 into Sierra Leone. We found two expressions of these narratives.

First, we found that because the APC (the party that ruled during the Ebola epidemic, now in opposition) had been accused of having brought about the epidemic and enriched themselves through the capture international aid (through "epidemic money"), then the current president, Maada Bio, was suspect of harbouring similar intentions: "Some of the people take it that when Ebola came, it was Ernest Bai Koroma so when Maada also came he should find a way to find money"[20]. This politicized and partisan assessment of the governance of the epidemic response has also been observed in other northern regions of the country (Lees et al., 2023).

Second, some interlocutors argued that COVID-19 was deliberately introduced to reduce the population of the north for the electoral benefit of the SLPP. The introduction of COVID-19 vaccines was also made sense of with this argument. These partisan narratives of mistrust were already prevalent during the Ebola epidemic but with reversed regional dynamics (Shepler, 2017), illustrating, again, a sense of continuity with the past, and mirroring traumatic lessons from the Ebola times, which contribute to a negative collective memory (McLean, 2024). In any case, these narratives of a neglectful state, accused of corruption and diversion of international aid funds, driven by a government seeking to eliminate its opposition's electoral base via the spread of a virus or vaccines, also contributed to diminishing the perceived severity of COVID-19 ("health workers are not being paid, so COVID cannot be so serious"[21]). Such critiques not only eroded trust in the government but also contributed to scepticism towards COVID-19 vaccines. Although further research may be required to fully understand the comparative dynamics of political support during the Ebola and COVID-19 epidemics, particularly within our study districts, our findings nonetheless point to a recurrent partisan mode of interpreting epidemics and a persisting regionalised political logic, consistent with previous research conducted in Sierra Leone.

Finally, we found that the motivations of powerful external actors, such as Western countries and international aid agencies, to promote vaccination against COVID-19 in Sierra Leone (and Africa in general), were also subject to narratives of mistrust. Some perceived these actors as having ulterior motives: "*[a man]* said the vaccine changes people's DNA. The white people want to change Africa through this vaccine called COVID-19",[22] including the desire to use African countries for clinical testing or to reduce or control African population growth. Much like in the case of the Sierra Leonean state, these suspicions fueled distrust in the vaccination process and sowed seeds of doubt regarding the intentions of those promoting vaccination initiatives. While some may consider these ideas as mere rumours or conspiracy theories, their underlying logic can be seen to parallel controversies stemming from certain French scientists that proposed testing the potential protection of BCG vaccines against COVID-19 first in African countries (Tilley, 2020). Yet this is not the first time that such narratives have been formulated. This making sense of foreign Western aid actors' actions is inevitably also rooted in African populations' long history of engagement with medical research and international development agencies (Graboyes, 2015; Wenzel Geissler and Molyneux, 2011).

[15] IDI, Facility Management Committee representative, Bombali.

[16] Doctors in Sierra Leone issued a strike notice due to unpaid salaries and other grievances. They are demanding better working conditions, including adequate protective gear and improved facilities. Sierraloaded, 07 July 2022 (https://sierraloaded.sl/news/sierra-leone-doctors-issue-strike-notice/).

[17] Observation notes, Okada park, Bombali.

[18] The population's perception of political action, perceived as the accumulation of wealth and power, resonates with Jean François Bayart's concept of the "politics of the belly". Further analysis could be enriched by employing this framework (See Bayart, 2009).

[19] This might be aligned, again, with Jean François Bayart's views on how African elites have contributed to post-colonial states' dependency on foreign aid, investment, and trade, often at the expense of domestic development and sovereignty, reflecting a prioritization of external relationships over internal governance and welfare (See Bayart 2000).

[20] FGD, Community-based health provider, Port Loko.

[21] Scoping workshop notes, Port Loko.

[22] Observation notes, COVID-19 vaccination surge, Bombali.

3.3. Global health priorities and competing crisis

The process of shadowing outreach vaccination teams revealed hesitancies towards COVID-19 vaccines that were articulated through narratives that went beyond logics of mistrust of power. Vaccination teams going into residential areas were met with a variety of sentiments, yet one of the recurrent observations we made was the appeal that they "bring food, not vaccines!".[23] This comment underscores the felt misalignment and dissociation between (global) health priorities calling for greater COVID-19 vaccination rates and the needs of those being targeted by vaccination campaigns which found themselves in increasingly precarious material conditions. The COVID-19 pandemic was ubiquitously perceived to have exacerbated the economic strain on the country, resulting in widespread suffering and food insecurity: "*[a man]* further states that the COVID-19 has caused many people to remain in poverty as there are no jobs, no business flowing".[24] This was often contrasted to the epidemiological reality of COVID-19 - its 'invisibility'- arguing that "even though people did not die of it, the hardship is too much in the country".[25]

Once we had study results to share, we held dissemination meetings with key community stakeholders we had engaged at the start of the study. Triggered by the results we shared, a participant in one of the meetings made an important reflection about how the push for COVID-19 vaccination was puzzling from the vantage point of Sierra Leone's epidemiological and socio-economic reality. The participant explained how it was hard to comprehend that in spite of the devastation brought by the Ebola epidemic, no vaccine had been developed, while the health impact of the COVID-19 pandemic had not been felt yet it only took one year for vaccines to arrive in the country.

Together, this perplexity at the speed of COVID-19 vaccine development and deployment vis a vis that of Ebola, and the appeals for food instead of vaccines, are part of a broader narrative on priority-setting in global health that raises questions about whose needs are being prioritized and which realities are being considered. Other research conducted in Sierra Leone during the COVID-19 pandemic shows how the crisis of livelihood came to "compete with a pandemic temporality that prioritizes one anticipated crisis above all others" (MacGregor et al., 2022). These reflections echo scholars' critical analyses of epidemic response efforts that "over-prioritize global systems, misdirecting attention and resources from the more pressing priorities of people" (ibid). In this way, narratives of competing crises and misaligned priorities came to also shape how the COVID-19 pandemic and immunisation response were being socially imagined as a foreign priority and crisis and, consequently, how vaccination efforts were being received.

3.4. Rethinking vaccine hesitancy through social imaginaries

It is important to note that, with (considerable) time, the uptake of COVID-19 vaccines gradually increased. This was acknowledged by participants in our study and corroborated by official data on vaccination coverage rates in Sierra Leone, indicating an extraordinary surge by the end of 2022.[26] According to participants' accounts, the (late) success of vaccination efforts was characterized by the involvement of trusted figures within their communities. Traditional healers, local political leaders, and familiar healthcare providers played pivotal roles in addressing vaccine hesitancy and fostering trust in vaccination campaigns. Some of them served as "vaccination role-models", effectively alleviating concerns among hesitant citizens, while emphasizing the pragmatic benefits of receiving COVID-19 vaccines. The COVID-19 vaccination campaign was nevertheless sluggish and only picked up 1.5 years after its start, suggesting an equally sluggish waning of the reticences identified in our study.

The concept of 'social imaginaries' has allowed us to make sense of vaccine hesitancy in a way that reflects the complexity we encountered as we researched this phenomenon in northern Sierra Leone. As a concept that emphasizes the collective and mutating dimension of 'meaning-making', it has allowed us to account for both historical and contemporary factors that have shaped how the COVID-19 pandemic has been socially imagined in this setting. In northern Sierra Leone, we have seen that the COVID-19 imaginary is deeply grounded in experiences with previous outbreaks, particularly the 2014-16 West African Ebola epidemic. Other research conducted in Sierra Leone throughout the COVID-19 pandemic has also pointed out how "Ebola provided a framework with which to understand what was happening" (Lees et al., 2023). Memories of the Ebola epidemic have had a profound impact on how the social imaginary of COVID-19 was weaved together. In fact, the legacy of this Ebola epidemic, with its specific cultural, social, and political consequences, will likely continue to exert influence on how communities perceive and respond to future health crises.

Other studies have also mobilized the concept of social imaginaries to shed light on the ways that people have sought to make sense of the COVID-19 pandemic. For instance, a study on the psychosocial impact of the COVID-19 pandemic on students in Wuhan found that both the concept of 'social imaginary' and 'collective memory of disaster' were necessary to understand the relationship between students' past experience with the pandemic and their current lived experiences (Luo et al., 2022). In our study, understanding the role of epidemic memories in shaping the COVID-19 imaginary has been key to understanding why COVID-19 vaccines were readily deemed useless, and vaccination efforts futile, in a way that is specific to this setting.

We have also seen that, in essence, trust – or lack thereof – has profoundly shaped the social landscape of COVID-19 vaccination efforts. However, in our study, mistrust in vaccines cannot be attributed to a lack of trust in medicine and science, an analysis that conventionally attributes responsibility to individual citizens for making "unscientific" decisions (Vanderslott et al., 2022). In line with anthropological literature on the 2014-15 West Africa Ebola epidemic (Enria, 2019), the way in which mistrust in vaccines was articulated in our study required that we broaden and expand our analysis to include (mis)trust in the state, with a focus on the governance of the epidemic response and the historically significant political dynamics of health crises. By revealing how these narratives of mistrust in state governance shaped how the COVID-19 response was being socially imagined we have shown why vaccination campaigns were regarded with suspicion ultimately, influencing vaccine-related behaviours.

4. Conclusions

As a construct that reflects both historical legacies and contemporary realities, the 'social imaginary of epidemics' has proven useful for understanding the 'constellations of meaning' that vaccine hesitancy is embedded in this specific setting and time. Understanding this imaginary has enabled us to trace the origins of concrete forms and expressions of refusal to receive COVID-19 vaccines beyond the prism of individual choice. Our analysis directly responds to calls for more contextualized approaches to vaccine hesitancy and broadening the geographical focus to center experiences from the Global South, as noted at the start. Beyond its potential practical applications for implementers, the main value of these insights lies in uncovering deeper socially-shared meanings that enable vaccine hesitancy, while contributing to broader discussions about structural precarities in healthcare delivery, and the politics of agenda-setting in global health.

[23] Observation notes, COVID-19 vaccination surge, Bombali.

[24] Observation notes, *Poyo* bar, Bombali.

[25] IDI, Market woman, Bombali.

[26] Sierra Leone and a few other countries did manage to attain the 70 % target by the end of 2022. See Sierra Leone vaccinates 70 % of its population against COVID-19, meets global target (https://www.afro.who.int/countries/sierra-leone/news/sierra-leone-vaccinates-70-its-population-against-covid-19-meets-global-target accessed on the 28th February 2025).

CRediT authorship contribution statement

Yara Alonso: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Abu Bakarr Jalloh:** Writing – review & editing, Validation, Supervision, Resources, Investigation, Formal analysis, Data curation, Conceptualization. **Kwabena Owusu-Kyei:** Writing – review & editing, Validation, Supervision, Resources, Conceptualization. **Augustin E. Fombah:** Writing – review & editing, Validation, Resources, Project administration, Conceptualization. **Clara Menéndez:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Methodology, Funding acquisition, Conceptualization. **Mohamed Samai:** Writing – review & editing, Validation, Resources, Conceptualization. **Cristina Enguita-Fernàndez:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Ethical considerations

We declare that ethics approval was obtained from The Sierra Leone Ethics and Scientific Review Committee.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

Alizadeh, H., Sharifi, A., Damanbagh, S., Nazarnia, H., & Nazarnia, M. (2023). Impacts of the COVID-19 pandemic on the social sphere and lessons for crisis management: A literature review. *Natural Hazards, 117*, 2139–2164. https://doi.org/10.1007/s11069-023-05959-2

Allen, A., & Fitzpatrick, M. (2007). Vaccine: The controversial story of medicine's greatest lifesaver. *Journal of the Royal Society of Medicine, 100*.

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology, 8*, 19–32. https://doi.org/10.1080/1364557032000119616

Azak, A. N., & Wigen, E. (2022). "Whatever they say I do the opposite": Vaccine resistance in Turkey during the covid-19 pandemic. *Medical Anthropology, 41*, 778–793. https://doi.org/10.1080/01459740.2022.2142578

Basu, S., Ashok, G., Debroy, R., Ramaiah, S., Livingstone, P., & Anbarasu, A. (2023). Impact of the COVID-19 pandemic on routine vaccine landscape: A global perspective. *Human Vaccines & Immunotherapeutics, 19*. https://doi.org/10.1080/21645515.2023.2199656

Bayart, J.-F. (2000). Africa in the World: A History of Extraversion. *African Affairs, 99* (395), 217–267.

Bayart, J.-F. (2009). The state in Africa. *The politics of the belly*. Cambridge: Polity Press.

Betsch, C., Schmid, P., Heinemeier, D., Korn, L., Holtmann, C., & Böhm, R. (2018). Beyond confidence: Development of a measure assessing the 5C psychological antecedents of vaccination. *PLoS One, 13*, Article e0208601.

Bilkis, M. (2021). *Vaccine rollout steps up a gear in Sierra Leone* [WWW Document].

Dilley, R. M. (2002). The problem of context in social and cultural anthropology. *Language & Communication, 22*, 437–456. https://doi.org/10.1016/S0271-5309(02)00019-8

Eagan, R. L., Larson, H. J., & de Figueiredo, A. (2023). Recent trends in vaccine coverage and confidence: A cause for concern. *Human Vaccines & Immunotherapeutics, 19*. https://doi.org/10.1080/21645515.2023.2237374

Elston, J. W. T., Moosa, A. J., Moses, F., Walker, G., Dotta, N., Waldman, R. J., & Wright, J. (2016). Impact of the Ebola outbreak on health systems and population health in Sierra Leone. *Journal of Public Health, 38*, 673–678. https://doi.org/10.1093/pubmed/fdv158

Enria, L. (2019). The Ebola crisis in Sierra Leone: Mediating containment and engagement in humanitarian emergencies. *Development and Change, 50*, 1602–1623. https://doi.org/10.1111/dech.12538

Enria, L., Bangura, J. S., Kanu, H. M., Kalokoh, J. A., Timbo, A. D., Kamara, M., Fofanah, M., Kamara, A. N., Kamara, A. I., Kamara, M. M., Suma, I. S., Kamara, O. M., Kamara, A. M., Kamara, A. O., Kamara, A. B., Kamara, E., Lees, S., Marchant, M., & Murray, M. (2021). Bringing the social into vaccination research: Community-led ethnography and trust-building in immunization programs in Sierra Leone. *PLoS One, 16*.

Evans, D. K., Goldstein, M., & Popova, A. (2015). Health-care worker mortality and the legacy of the Ebola epidemic. *Lancet Global Health, 3*, e439–e440. https://doi.org/10.1016/S2214-109X(15)00065-0

Ferranna, M. (2023). Causes and costs of global COVID-19 vaccine inequity. *Seminars in Immunopathology*. https://doi.org/10.1007/s00281-023-00998-0

Gaonkar, D. P. (2002). *Toward new imaginaries : Public cult* (Vol. 14, pp. 1–19).

Gerretsen, P., Kim, J., Caravaggio, F., Quilty, L., Sanches, M., Wells, S., Brown, E. E., Agic, B., Pollock, B. G., & Graff-Guerrero, A. (2021). Individual determinants of COVID-19 vaccine hesitancy. *PLoS One, 16*, 1–14. https://doi.org/10.1371/journal.pone.0258462

Graboyes, M. (2015). *The experiment must continue: Medical research and ethics in East Africa, 1940–2014*. Athens: Ohio University Press.

Grossman, V. A. (2021). The COVID-19 vaccine: Why the hesitancy? *Journal of Radiology Nursing, 40*, 116–119. https://doi.org/10.1016/j.jradnu.2021.02.011

James, M., Mansaray, A., Thige, F. O., Mafinda, M., Kasonia, K. K., Paluku, J. K., Timbo, A. D., Karenzi, L., Ntabala, F., Tindanbil, D., Leigh, B., Kavunga-Membo, H., Watson-Jones, D., Gallagher, K., & Enria, L. (2023). Continuity and rupture in crisis: From Ebola to COVID-19 in Sierra Leone and the eastern democratic republic of the Congo. *Global Public Health, 18*. https://doi.org/10.1080/17441692.2023.2259959

Johnson, N. F., Velásquez, N., Restrepo, N. J., Leahy, R., Gabriel, N., El Oud, S., Zheng, M., Manrique, P., Wuchty, S., & Lupu, Y. (2020). The online competition between pro- and anti-vaccination views. *Nature, 582*, 230–233. https://doi.org/10.1038/s41586-020-2281-1

Larsen, M. M., Dragolov, G., & Delhey, J. (2023). Editorial: The COVID-19 pandemic and social cohesion across the globe. *Frontiers Sociology, 8*. https://doi.org/10.3389/fsoc.2023.1182452

Larson, H. J., Gakidou, E., & Murray, C. J. L. (2022). The vaccine-hesitant moment. *New England Journal of Medicine, 387*, 58–65. https://doi.org/10.1056/nejmra2106441

Leach, M., & Fairhead, J. (2012). *Vaccine anxieties: Global science, child health and society, vaccine anxieties: Global science*. Child Health and Society. https://doi.org/10.4324/9781849773690

Leach, M., MacGregor, H., Akello, G., Babawo, L., Baluku, M., Desclaux, A., Grant, C., Kamara, F., Nyakoi, M., Parker, M., Richards, P., Mokuwa, E., Okello, B., Sams, K., & Sow, K. (2022). Vaccine anxieties, vaccine preparedness: Perspectives from Africa in a Covid-19 era. *Social Science & Medicine, 298*, Article 114826. https://doi.org/10.1016/j.socscimed.2022.114826

Lees, S., Enria, L., & James, M. (2023). Contesting the crisis narrative: Epidemic accounts in Sierra Leone, Tanzania, and democratic republic of the Congo. *Disasters, 47*, 78–98. https://doi.org/10.1111/disa.12535

Lévi-Strauss, C. (1966). *The savage mind*. Chicago: University of Chicago Press.

Luo, R., Feng, W., & Xu, Y. (2022). Collective memory and social imaginaries of the epidemic situation in COVID-19—based on the qualitative research of college students in Wuhan, China. *Frontiers in Psychology, 13*, 1–11. https://doi.org/10.3389/fpsyg.2022.998121

MacDonald, N. E., Eskola, J., Liang, X., Chaudhuri, M., Dube, E., Gellin, B., Goldstein, S., Larson, H., Manzo, M. L., Reingold, A., Tshering, K., Zhou, Y., Duclos, P., Guirguis, S., Hickler, B., & Schuster, M. (2015). Vaccine hesitancy: Definition, scope and determinants. *Vaccine, 33*, 4161–4164. https://doi.org/10.1016/j.vaccine.2015.04.036

MacGregor, H., Leach, M., Akello, G., Sao Babawo, L., Baluku, M., Desclaux, A., Grant, C., Kamara, F., Martineau, F., Yei Mokuwa, E., Parker, M., Richards, P., Sams, K., Sow, K., & Wilkinson, A. (2022). Negotiating intersecting precarities: COVID-19, pandemic preparedness and response in Africa. *Medical Anthropology, 41*, 19–33. https://doi.org/10.1080/01459740.2021.2015591

McLean, K. E. (2024). Ebola lessons: Did prior epidemic experience protect against the spread of COVID-19 in Sierra Leone? *Medical Anthropology Quarterly, 38*, 164–178. https://doi.org/10.1111/maq.12850

Mylan, S. (2024). Suspicious business: COVID-19 vaccination in palabek refugee settlement, northern Uganda. *Social Science & Medicine, 346*, Article 116695. https://doi.org/10.1016/j.socscimed.2024.116695

Nuwarda, R. F., Ramzan, I., Weekes, L., & Kayser, V. (2022). Vaccine hesitancy: Contemporary issues and historical background. *Vaccines, 10*. https://doi.org/10.3390/vaccines10101595

Peretti-Watel, P., Larson, H. J., Ward, J. K., Schulz, W. S., & Verger, P. (2015). Vaccine hesitancy: Clarifying a theoretical framework for an ambiguous notion. *PLoS Current, 25*. https://doi.org/10.1371/currents.outbreaks.6844c80ff9f5b273f34c91f71b7fc289

Prata Menezes, N., Simuzingili, M., Yilima Debebe, Z., Pivodic, F., & Massiah, E. (2021). *What is driving COVID-19 vaccine hesitancy in Sub-Saharan Africa?* World Bank blogs [WWW Document].

Rathje, S., He, J. K., Roozenbeek, J., Van Bavel, J. J., & Van Der Linden, S. (2022). Social media behavior is associated with vaccine hesitancy. *PNAS Nexus, 1*, 1–11. https://doi.org/10.1093/pnasnexus/pgac207

Richards, P., Kamara, F., Mokuwa, E., & Nyakoi, M. (2024). Comparing social responses to Ebola and covid-19 in Sierra Leone: An institutional analysis. *Journal of Biosocial Science*. https://doi.org/10.1017/S002193202400021X

Shapira, G., Ahmed, T., Drouard, S. H. P., Amor Fernandez, P., Kandpal, E., Nzelu, C., Wesseh, C. S., Mohamud, N. A., Smart, F., Mwansambo, C., Baye, M. L., Diabate, M., Yuma, S., Ogunlayi, M., Rusatira, R. J. D. D., Hashemi, T., Vergeer, P., & Friedman, J. (2021). Disruptions in maternal and child health service utilization during COVID-19: Analysis from eight sub-Saharan African countries. *Health Policy Plan, 36*, 1140–1151. https://doi.org/10.1093/heapol/czab064

Shepler, S. (2017). "We know who is eating the Ebola money!": Corruption, the state, and the Ebola response. *Anthropological Quarterly, 90*, 451–473. https://doi.org/10.1353/anq.2017.0026

Solís Arce, J. S., Warren, S. S., Meriggi, N. F., Scacco, A., McMurry, N., Voors, M., Syunyaev, G., Malik, A. A., Aboutajdine, S., Armand, A., Asad, S., Augsburg, B., Bancalari, A., Nyqvist, M. B., Borisova, E., Bosancianu, C. M., Cheema, A., Collins, E., Farooqi, A. Z., … Mobarak, A. M. (2021). COVID-19 vaccine acceptance and hesitancy in low and middle income countries, and implications for messaging. *medRxiv*. https://doi.org/10.1101/2021.03.11.21253419

Talisuna, A. O., Okiro, E. A., Yahaya, A. A., Stephen, M., Bonkoungou, B., Musa, E. O., Minkoulou, E. M., Okeibunor, J., Impouma, B., Djingarey, H. M., Yao, N. K. M., Oka, S., Yoti, Z., & Fall, I. S. (2020). Spatial and temporal distribution of infectious disease epidemics, disasters and other potential public health emergencies in the World Health Organisation Africa region, 2016-2018. *Globalization and Health, 16*, 1–12. https://doi.org/10.1186/s12992-019-0540-4

Taylor, C. (2002). Modern social imaginaries. *Public Culture, 14*, 107–128. https://doi.org/10.3366/edinburgh/9780748691937.003.0006

Teerawattananon, Y., Botwright, S., & Ozturk, M. H. (2022). Planning for future COVID-19 vaccine procurement. *Bulletin of the World Health Organization, 100*. https://doi.org/10.2471/BLT.22.288729, 526-526A.

Thomson, A., Robinson, K., & Vallée-Tourangeau, G. (2016). The 5As: A practical taxonomy for the determinants of vaccine uptake. *Vaccine, 34*, 1018–1024. https://doi.org/10.1016/j.vaccine.2015.11.065

Tilley, H. (2020). COVID-19 across Africa: Colonial hangovers, racial hierarchies, and medical histories. *Journal West African Historical, 6*, 155–179.

Usher, A. D. (2021). A beautiful idea: How COVAX has fallen short. *Lancet (London, England), 397*, 2322–2325. https://doi.org/10.1016/S0140-6736(21)01367-2

Vanderslott, S., Enria, L., Bowmer, A., Kamara, A., & Lees, S. (2022). Attributing public ignorance in vaccination narratives. *Social Science & Medicine, 307*, Article 115152. https://doi.org/10.1016/j.socscimed.2022.115152

Wariri, O., Afolabi, M. O., Mukandavire, C., Saidu, Y., Balogun, O. D., Ndiaye, S., Okpo, E. A., Nomhwange, T., Uthman, O. A., & Kampmann, B. (2023). COVID-19 vaccination implementation in 52 African countries: Trajectory and implications for future pandemic preparedness. *BMJ Global Health, 8*, 1–10. https://doi.org/10.1136/bmjgh-2023-013073

Wenzel Geissler, P., & Molyneux, C. (Eds.). (2011). *Evidence, ethos and experiment: The anthropology and history of medical research in Africa*. New York: Berghahn Books.

WFP-Sierra Leone Country Office. (2022). *Food security monitoring system report*.

Wilkinson, A., & Fairhead, J. (2017). Comparison of social resistance to Ebola response in Sierra Leone and Guinea suggests explanations lie in political configurations not culture. *Critical Public Health, 27*, 14–27. https://doi.org/10.1080/09581596.2016.1252034

World Bank Group Sierra Leone. (2021). *COVID-19 emergency preparedness and response project*. Washington D.C.

World Health Organization. (2014). *Report of the SAGE working group on vaccine hesitancy*. WHO COVID-19 Glob. data 64.

World Health Organization. (2022). *Behavioural and social drivers of vaccination: Tools and practical guidance for achieving high uptake*. Geneva.