**Busara
Groundwork**

RESEARCH AGENDA

Mareike Schomerus, Krittika Gorur, Pooja Gupta, Daniel Hernandez, Sandhya Srinivas, Alice Escande, Mark Milrine, Chang Tang, Lara Tembey

April 2023

A Complicated Relationship:

Bringing Behavioral Science into the Fight Against Health Misinformation in a Pandemic in Displacement Settings

Busara Groundwork
lays the groundwork for future research and program design. As think pieces, they examine the current state of knowledge and what is needed to advance it, frame important issues with a behavioral perspective, or put forward background information on a specific context.

RESEARCH AGENDA

Busara

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Abbreviations

C-Section	Caesarean section
DRC	Democratic Republic of the Congo
IDP	Internally displaced person
NGO	Non-governmental organisation
SMS	Short message service
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
WHO	World Health Organization

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Acknowledgements

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Introduction: Operationalising 'Infodemic Management'

As the COVID-19 virus was starting to grip the world, something else took hold, which United Nations (UN) Secretary General António Guterres described as the unleashing of 'a tsunami of misinformation, hate, scapegoating and scare-mongering.'[1] The phenomenon of an 'infodemic' during a disease outbreak had long been identified by the World Health Organization (WHO) as 'too much information including false or misleading information in digital and physical environments during a disease outbreak.'[2] This overload, so the WHO, 'causes confusion and risk-taking behaviors that can harm health' as well as leading 'to mistrust in health authorities,' which in turn 'undermines the public health response.'[3] The infodemic on COVID-19 meant that people were not pursuing preventative and health-seeking behaviors to the extent they might have been inclined to—had there not been the overabundance of information or what was, in their eyes, more reliable guidance. That people follow such public health advice will be necessary to manage future pandemics better. In the case of the COVID-19 pandemic, disregard or slow adoption of guidance likely made the pandemic worse. The experience of COVID-19 taught early on that the infodemic challenge needs to be addressed because the effects of spreading misinformation can be devastating.

This is not a theoretical problem and not confined to the COVID-19 pandemic. A study from Poland impressively illustrates the power of the infodemic: to understand the magnitude of public health misinformation circulating in social media, Waszak et al. quantified it for Poland's public health information landscape in the years 2012 to 2017. The findings are staggering: 40% of shared content related to public health in Poland over five years contained misinformation. This content was shared more than 450,000 times. A single source or agent had generated 20% of such content.[4] Other prominent examples exist that concretely show the damage such public health misinformation does: Gure et al. argue, for example, that widespread misinformation that condoms cause HIV was a hindrance to health-seeking behaviors among Somali women.[5] The problematic link between misinformation, its spread, and the health of people is very real.

A UN high-level communication suggests a consensus on how to manage an infodemic: it made clear that it saw the responsibility as resting chiefly with states. A UN cross-regional statement, signed by 132 member states, non-member observer states, and observers emphasised that states needed to 'counter misinformation as a toxic driver of secondary impacts of the pandemic that can heighten the risk of conflict, violence, human rights violations and mass atrocities.'[6] The signatories further stressed

---

[1] World Health Organization (2020)
[2] World Health Organization (nd)
[3] Ibid.
[4] Waszak, Kasprzycka-Waszak and Kubanek (2018)
[5] Gure, Yusuf and Foster (2015)

[6] U.S. Mission to the United Nations (2020 (June 12))The statement was authored by Australia, Chile, France, Georgia, India, Indonesia, Latvia, Lebanon, Mauritius, Mexico, Norway, Senegal, and South Africa

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

'the crucial need for access to free, reliable, trustworthy, factual, multilingual, targeted, accurate, clear and science-based information, as well as for ensuring dialogue and participation of all stakeholders and affected communities during the preparedness, readiness and response.'[7]

To avoid that an infodemic intensifies or lengthens disease outbreaks, the WHO put forward the following four pathways for future 'infodemic management':

■ listening to community concerns and questions;

■ promoting understanding of risk and health expert advice;

■ building resilience to misinformation;

■ engaging and empowering communities to take positive action.[8]

Previous suggestions on how to manage an infodemic have also stressed the need to monitor what information spreads; to support recipients of information to be more knowledgeable in how to assess information quality; and to depoliticise public health knowledge (as much as possible).[9]

The Infodemic Management Blindspot: Humans' Complicated Relationship with Information

Holding states responsible (following the pathways outlined above) and seeking to improve people's knowledge assessment skills while keeping politics out of it seem sensible suggestions. All of these have been reflected in strategies to counter misinformation or to promote understanding of what a health authority considers to be good facts. In order to present such information as much as possible as non-partisan or apolitical, international development actors (often in collaboration with states) have sought to embed information into existing community structures. Many of these approaches share the main objective to first debunk misinformation and then to provide counterinformation. The underpinning assumption is that scientifically better information will win and propel people to take the recommended action, and that scientific information can be assessed separately from the political role the distributor plays.

However, the experience of the COVID-19 years has shown that such campaigns have neither comprehensively stemmed the infodemic, nor achieved that people universally adhered to expert health advice. Operationalising listening, promoting understanding, resilience building and empowering communities with the aim to stem the infodemic is more complex than offering counterinformation. This is likely because an approach that seeks to counter misinformation through the authority of the state and with good information has a crucial blind spot on how people interact with information and the authority that provides it. Particularly the WHO's two pathways of 1) promoting understanding of risk and health expert advice and 2) building resilience to misinformation

---

[7] Ibid.
[8] World Health Organization (nd)
[9] Gunther (2020 (Jun 29))

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

require a deeper understanding of the mechanisms through which understanding is achieved, how good information can be separated from bad information, and what resilience to misinformation might look like. Both pathways implicitly assume that the intricacies of how offering information translates to the effective promotion of good health-seeking behaviors in a pandemic are clear and well understood.

However, this is not the case. The knowledge base on the exact mechanisms through which any type of information becomes powerful and what cognitive biases may underpin information retention as well as how exactly information spreads is still being filled. Further, suggestions to promote understanding implicitly assume that once a fact is understood, it is also believed. For any intervention to be effective necessitates a much better understanding of the mechanisms by which random information becomes a credible fact for individuals and communities, how such information then directly influences health-seeking behaviors, and what might be trust-worthy community-based approaches to support an accurate information environment and conducive health behaviors. Two knowledge gaps in particular about humans' complicated relationship with information need to be addressed to make recommendations concrete and counter-measures effective.

First, in operationalising infodemic management, it is likely that barriers will exist to putting into practice the WHO's recommendations on community engagement, knowledge sharing, and countering misinformation and rumours. One such barrier might be that there are contextually-different pathways to how information becomes a credible fact—that is, how people process information and believe it. The second barrier is that some people act on their interpretation of information while others do not: what is it that spurs action or inaction? Here, the gap is on identifying the exact behavioral mechanisms that underpin information processes and consequent actions. A future research agenda will need to test how exactly behavioral mechanisms play out in how information is perceived and utilised by individuals.

Second is the need to consider context-specific reactions to information. This requires analysis of how context influences how information is understood and passed on, why particularly misleading content seems to circulate effortlessly, and why it is retained so easily. Behavioral mechanisms, much like emotions, are context-specific.[10] There is a danger of assuming that all people everywhere react in the same way when exposed to information, for example through a post on social media. To make matters more complicated, it is not just different people who react in different ways: even the same individual can process information differently depending on situational context. It is thus necessary to ask afresh in each situation how exactly a context influences behavioral mechanisms that influence uptake or dismissal of information, as well as whether people act on a piece of information or not. Stressing how important it is to take context into

---

[10] For the formative texts on this argument, see Henrich (2020), Henrich, Heine and Norenzayan (2010).

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

account for any programmatic intervention is common, yet what this truly means also for understanding how human behavior and engagement with information differs between settings is still unclear.

Thus, while the COVID-19 infodemic might have looked like a universal challenge, it is not. This is because the experience of the disease and its many impacts are not collective. What COVID-19 means differs from country to country, from situation to situation, and from person to person. How each individual is forced to contend with their situation is deeply influenced by who they are and in what situation they find themselves, their cultural background and the information that is accessible to them. Personal context of the person receiving information thus determines which pieces of information they retain, share and act upon. These contexts can be marked by other areas of uncertainty and volatility that interact with the volatility of a pandemic. One such context that is marked by uncertainty is that of displacement.

What Groundwork Does this Report Offer?

This report offers groundwork towards a research agenda on how behavioral mechanisms apply in the reception and consumption of information on infectious diseases in displacement settings. Such a research agenda is crucial to identify what practitioners need to consider when designing or implementing programs that seek to counter misinformation on health.

Presenting the case for the need to better understand the connection between humans' relationship with information and how they behave based on this relationship, this report focuses on situations of displacement and conflict-affected settings. It seeks to unpack what we currently do and do not know about the behavioral mechanisms that influence how misinformation spreads. It then suggests how possible behavioral mechanisms connect to an existing framework designed to help understand misinformation.

This *Groundwork* does so by first introducing a number of relevant behavioral mechanisms and cognitive biases, as well as a framework for understanding how information spreads. It then analyses the information landscapes in the early days of the COVID-19 pandemic in displacement settings in the Democratic Republic of the Congo (DRC), Kenya and Somalia through a review of academic literature, grey literature and news reports and interviews with humanitarian workers on the frontline of the COVID-19 response in three displacement settings in the DRC, Kenya and Somalia. It then unpacks how the behavioral mechanisms might be used to explain some of the reported phenomena of how people respond to information, outlining what future research is needed to better understand this relationship. Thus, the report suggests a future direction for infodemic management and sets up a research agenda that delves into two of the WHO's recommendations for infodemic management to unpack what challenges they currently encounter and what knowledge is needed to operationalise them in a meaningful way.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Methods

This report combines findings from a literature review and 19 key informant interviews. The literature review focused on the following questions:

1. What does research tell us about how misinformation spreads and what effective countermeasures can act against it, both worldwide and in the Global South?
2. What are the sources of official information and misleading information on COVID-19 in our countries of interest, and through which channels is this information disseminated?
3. What kind of false or misleading information on COVID-19 is circulating in the three countries?

Using readily available databases and search engines (such as Google and Google Scholar) we identified sources from different disciplines, namely behavioral science, psychology, anthropology, economics, public health, sociology and information technology. Search terms included 'misinformation' or 'disinformation' in combination with 'humanitarian' or 'refugee settings.' We prioritised a detailed review of roughly 35 different sources, including working papers, academic articles, and grey literature or reports from humanitarian agencies. We further included information from news articles, blogs and websites relevant to the three countries of interest.

We then conducted semi-structured interviews with 19 key informants (across Kenya, Somalia and DRC). These key informants were working for humanitarian or multilateral agencies, as well as non-profits and grassroot initiatives. We also interviewed a number of researchers working on similar issues. Key informants were assured anonymity.

Limitations

Due to the ever-changing nature of the pandemic, this *Groundwork* is not a comprehensive account of the evolving knowledge on the infodemic and the specific situations in Kenya, DR Congo and Somalia. What this report offers is an articulation of the flow of information in the early days of the COVID-19 pandemic, including what the assumed ways were in which information spread. It then asks how these insights can support formulation of a detailed future research agenda that can help particularly humanitarian actors who are seeking to provide health information to people in displacement settings. Empirical research on the types of information that circulated on COVID-19 and the impact they had on how people respond to the situation is in its infancy. This means that some of the information presented here is necessarily anecdotal, particularly when drawn from news stories. Moreover, how much information is available for each country differs tremendously: We found much more information on Kenya than on the other two countries. Political instability, available resources, differences in national responses to the crisis and media control might explain such differences.

Busara
Groundwork
RESEARCH AGENDA

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

We were least successful in finding information on the sources of COVID-19 myths and rumours. Given the complex nature of misinformation, we were only able to identify some of its channels in the countries of interest. Moreover, sources of mis- and disinformation can be diffuse and very difficult to track down using the tools of a literature review.

How Human Behavior and Misinformation Interact: Relevant Behavioral Mechanisms

To understand the most effective and sustainable ways in which practitioners through their programs can help manage an infodemic and build resilience against misinformation in future pandemics or epidemics, a crucial knowledge gap needs to be filled. Most interventions that seek to promote understanding of health advice and to build resilience against misinformation do so by targeting either communities or individuals with specific pieces of information. Most information campaigns work with how an individual recipient of information perceives a certain piece of information, how they act on it, and how they deploy learning about previous information they received but subsequently found out to be false. In the process, such campaigns aim to support individuals in building resilience to misinformation. Theories of Change underpinning most programmes tend to assume that diligently and repeatedly distributing correct information in a culturally-appropriate way is an effective way to foster sustainable understanding of the specifics of disease transmission and to build resilience against information that proposes non-scientific interpretations of the disease.

Few information campaigns, however, specifically consider the human ways in which distributed information turns into what someone believes and acts upon. There are a number of known behavioral mechanisms that might shape how individuals react to information and thus could contribute to uptake and spread of misinformation across all contexts. Future information campaigns that seek to counter misinformation need to understand exactly how and why information spreads and how understanding people's emotional experiences might be a crucial part of operationalising infodemic management to make such campaigns effective. It is thus necessary to understand through what behavioral mechanisms an individual might perceive, retain, utilise, and spread information.

We identified five known cognitive biases as particularly relevant here. These are described in more detail below with some pointers towards how they might have played out in the early days of the COVID-19 pandemic. However, supporting this analysis with empirical information on exactly how these biases influenced information uptake during COVID-19 in displacement settings will require further research.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Risk-as-Feelings

The risk-as-feelings hypothesis proposes that emotional responses like worry and anxiety (which develop when processing information) influence our ability to correctly assess how likely it is that a situation will turn out in the way we imagine and how good that outcome would be. In other words, emotions influence the cognitive evaluations about the probability and desirability of potential outcomes.[11] Upon hearing a piece of information, the emotions or feelings the information elicits in the person who hears the information influences decisions made, for example on whether to believe or disregard a piece of information. Either choice can lead to outcomes against a person's best interests. Emotions play a role in how information is received and utilized, and the more a piece of information can evoke negative emotions (such as anger, fear, and worry) within the person hearing the information, the more they are likely to pass information on.[12] This mechanism is a double-edged sword. Grounding public health messages in emotions has made campaigns on, for example, cancer prevention and road safety more effective.[13] However, telling emotional stories was also found to increase belief in anti-vaccine information.[14]

Disinformation strategies play on these mechanisms by offering emotional content, repetition, simplicity, and other tactics to lure in target audiences.[15] When the emotions that fuel the risk-as-feelings concept meet a situation of distress, the effect can be potent, as people are heavily influenced by the situation in which they find themselves. Studies conducted in environments of riots and natural disasters show that fear can influence how people perceive dangers, and as such, how they consume information that exacerbates this fear.[16] Feelings of anxiety or distrust can make someone more vulnerable to be influenced by misinformation based on the information that people seek out, retain, and reject.[17] Fear and uncertainty surrounding the pandemic can lead people who are already in stressful situations such as living in a displacement settlement, to seek information that appears to give answers and a form of closure, irrespective of whether it feels intuitively wrong or right.

Confirmation Bias

Confirmation bias occurs when people prioritise information that confirms what they already believe. It describes the complex interaction between belief and new information: existing beliefs (that a person wants to unknowingly confirm) shape how they then gather, interpret, and recall additional information. People who support or oppose a particular issue will seek information that supports their leanings, interpret (consciously or unconsciously) news stories in a way that upholds their existing ideas, and remember things in ways that

[11] Loewenstein, Weber, Hsee and Welch (2001)
[12] Brady, Gantman and Van Bavel (2020), Peters, Kashima and Clark (2009), Cotter (2008)
[13] Lewis, Watson, White and Tay (2007), Frisby (2006)
[14] Shelby and Ernst (2013)
[15] Horne and Adali (2017)
[16] Holmes (2015), Carlsnaes, Risse and Simmons (2013), Mercer (2010)}
[17] Pezzo and Beckstead (2006)

Busara Groundwork
RESEARCH AGENDA

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

reinforce their initial attitudes. When processing information, it is much more difficult for people to accept information that contradicts their firmly-held beliefs. Thus, misinformation can be very effective when it seems to confirm what people believe to be true. In the DRC, mistrust of government authorities led to confirmation that created widespread misinformation during the 2018 Ebola outbreak. The public, convinced that the authorities were not to be trusted, questioned that the disease was real and was reluctant to take up public health guidelines.[18]

By mentally closing the possibility of believing government-endorsed information on the disease, people's confirmation bias created a cycle of misinformation spread, stigmatisation, and even violence against certain groups of people, including migrants, minorities, or even health workers, in the context of epidemics.

Social Norms

The social world contributes crucially to the spread and power of misinformation. Social norms influence the extent to which a person is likely to accept and act on a piece of information. Social norms can contribute to fierce loyalties making it difficult to accept information that does not come from a source that is part of one's own group. The influence of social norms comes from the relevance of one's identity and an individual sharing a common identity with the group. This makes group behaviour possible.[19]

The influence of social norms, social influence and conformity on information acceptance can be the consequence of:

■ Conformity cascades: when a person accepts a rumour not because they believe it, but to conform with group opinion to be accepted or because they fear rejection if they go against the group's opinion.[20] Normative influence is part of this conformity cascade, where people believe something to avoid negative social sanctions and to gain acceptance.[21]

■ Group polarization: when a group begins to uniformly have an opinion about a topic, therefore influencing other members in the group to believe the same.[22] This happens when an individual looks to the group's position on a particular belief as evidence of reality.[23]

---

[18] Vinck, Pham, Bindu, Bedford and Nilles (2019)
[19] Hogg and Turner (1987), Turner, Hogg, Oakes, Reicher and Wetherell (1987)
[20] Bikhchandani, Hirshleifer, Tamuz and Welch (2021), Sunstein (2019), Sunstein (2014)
[21] Deutsch and Gerard (1955)
[22] Bikhchandani, Hirshleifer, Tamuz and Welch (2021), Sunstein (2019), Sunstein (2014)
[23] Deutsch and Gerard (1955)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

- Information cascades: when each person that accepts the idea or ideology adds validity to information and increases the likelihood of it getting accepted, thus increasing the spread of information in a network.[24]

Some of these patterns seemed to have applied to information regarding COVID-19 in Kenya, where close social groups played an instrumental role in misinformation spread. In combination with the feelings of fear and anxiety that arose from the crisis, this led to negative behaviors, such as the stigmatization of COVID-19 patients.[25]

Trust in Information Source

The level of trust (or distrust) that a person has in the source of information, and the clarity of the content presented, can influence how likely it is that someone believes and retains a message. This is the reason why the notion that scientific health information can be presented in apolitical ways might be misleading: A government as the source of information is unlikely to ever be perceived as an entirely neutral actor. In Kenya, for example, where trust in government authorities is uneven, social media posts have been reported to be more influential than verified public health information, thus leaving more people susceptible to the spread and consumption of misinformation on false remedies.[26] Social media here likely develops its own dynamic, with knock-on effects for future trust in government authorities. There is also an interplay of different mechanisms that makes information particularly vulnerable to manipulation, and determines whether it is trusted or not. For example, how popular a particular piece of information is perceived to be—that is how many other people seem to follow or reject it—can act as an endorsement or dismissal of the information's source. This is particularly tricky, as people's perception of just how much social media is in consensus about an issue is also filtered through a confirmation bias.

Availability Heuristic and Mere-Exposure Effect

This effect on the uptake of misinformation has its roots in people's tendency to pay most attention to information that is top of their mind, meaning that is most readily available to them. This availability can be created in various ways. The availability heuristic describes the phenomenon that people tend to draw conclusions about whether or not a piece of information is correct based on how plausible it seems to them, based on their previous experience. The availability heuristic is also influenced simply by what is most easily remembered. Kahnemann and Tversky describe it as people using the information most readily available to them when interpreting a situation.[27] If a person has just heard a

---

[24] Bikhchandani, Hirshleifer, Tamuz and Welch (2021), Sunstein (2019), Sunstein (2014)
[25] Africa Check (2020 (23 June))
[26] Ibid.
[27] Tversky and Kahneman (1973)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

particular piece of news on the radio, that piece of information is top of mind and thus more available, influencing how the next piece of information is assessed.

The mere-exposure effect is related to the availability heuristic, describing human tendency to like what is familiar and the extent to which this can be used to manipulate. This means that if a person is given a particular piece of information and they become familiar with it after multiple repetitions, they are likely to assess future information on the basis of their initial mere exposure, regardless of accuracy of that information. For the mere exposure effect to work in this way, information that is added needs to consist of the same type of information that the initial mere exposure created. In terms of COVID-19 misinformation, this mechanism might be particularly powerful when it comes to rumours that are not quite identical, but similar enough to give the impression of a coherent and plausible story.

Other mechanisms might be at play here, such as fluency, memory or convergent validity. Within the broad scholarship, there is much debate on the nuanced differences between these, but broadly fluency refers to the insight that repeated information becomes easier to process and understand (making someone more fluent in using it). This can influence judgements, especially judgments of truth. Memory of a fact is strengthened by repetition, making a fact easier to recall and thus seem truer. Convergent validity means that repeated information can be mistaken as coming from multiple sources, resulting in a false belief of group consensus and thus increasing the validity of the information.[28]

Understanding how these cognitive biases work, and how they intersect with information and people's individual context, can provide a solid foundation for drafting Theories of Change that realistically address the way information functions. To be able to create nuanced interventions, however, it is crucial to also look at the pathways of how misinformation spreads.

Background: Understanding Misinformation Spread through Agent, Content, Interpreter

The following section links some of the behavioral mechanisms outlined above to common approaches to understanding misinformation and how it might spread. The most established definition of what misinformation is comes from Wardle and Derakhshan, who emphasise the importance of intent with which a piece of information is spread. In their framework of 'information disorder', misinformation is the spread of false information, regardless of the intent to mislead, meaning that people might spread information not knowing that it is misleading.[29] Content is often created to spread as widely as possible

---

[28] Ecker, Lewandowsky, Cook, Schmid, Fazio, Brashier, Kendeou, Vraga and Amazeen (2022), Pillai and Fazio (2021 (August 3))

[29] Wardle (2019), Wardle and Derakhshan (2017) Unlike misinformation, which does not care about intent, disinformation is the spread of false information with the specific intention to mislead. Misinformation and

Busara Groundwork RESEARCH AGENDA

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

via repeated exposure and emotionally-charged messages. Wardle and Derakhshan's theoretical model aimed at understanding how misinformation is created, spreads, and becomes impactful employs the concepts of *agent, content* and *interpreter*. The *agent* is the source, the *content* is the message while the *interpreter* is the recipient.[30]

Agent

Any person can swiftly transition from interpreter to agent: a quick retweet of a received message turns a recipient into a content creator.[31] The fast nature of information spreading via social media makes identifying an agent a tricky task, as agents can quickly change and multiply. However, a few actors can be identified as regularly acting as agents particularly in the contexts relevant for this report.

Governments and political groups have been found to design and execute disinformation campaigns, benefitting from their power and reputation. Emerging research on Kenya, Uganda and Somalia shows the extent to which citizens' beliefs can be exploited in favour of partisan positions around preventive health care measures.[32]

Traditional media can be agents of misinformation, at times acting in the name of governing authorities. A COVID-19-related example is excessive coverage of alleged treatments as part of general reporting on the pandemic. Some of these reports were taken at face value by the public, leading in some cases to hospitalization for overdosing on alleged cures that in reality were toxic substances.[33]

New media—including social media, blogs and online communities—often amplifies information from political groups or other communities. New media is often referred to as creating echo chambers, filter bubbles or cyber ghettos, which has fragmented and fractionalised information landscapes while utilising the general public's vulnerability to confirmation bias.[34]

Communities, families and peers play a crucial role as information agents. This is because a recipient/interpreter of content from such sources has an emotional and often trusting bond, which also shapes their perceptions of these agents. This emotional connection supports believing in the information offered, but also plays a role in how well it is retained and how it is acted upon.[35]

---

disinformation can come in many forms (for example social media, word of mouth, or propaganda). This report is concerned less with disinformation, but focuses on misinformation.

[30] Wardle (2019), Wardle and Derakhshan (2017)

[31] Lewandowsky, Ecker, Seifert, Schwarz and Cook (2012)

[32] Brisset-Foucault (2018), {Stremlau (2016), Stremlau, Fantini and Gagliardone (2015)

[33] Soto (2020)

[34] Wason (1960)

[35] Cotter (2008)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Content

Linking the nature of content to the agent, it becomes clear that messages that create an emotional reaction in the interpreter—for example encouraging feelings of superiority, anger or fear—are more likely to travel quickly and consistently.[36] This is because people are more inclined to share content with online and offline communities with whom they identify and from whom they expect a similar emotional reaction (such as the above-mentioned feelings), even if such content can easily be shown to be misinformation.[37]

Along with the emotional response a message can elicit, frequent exposure through repetition by various agents likely makes people more susceptible to believing content.[38] Easy availability of information induces the availability bias.[39] Repeatedly hearing the same piece of information increases people's familiarity with it and facilitates its retention, which can increase the likelihood that people stop questioning its truthfulness, creating an illusory truth effect.[40] This repetition and consequent lack of questioning can be a tactic to promote what sometimes might be perceived as contentious information. One example of repetition as a tool of retention is an initiative that uses WhatsApp to repeatedly send information with the aim of coordinating immunization activities for measles in Nigeria.[41] The effect that repeatedly hearing a piece of information makes it stick even seems to work when people initially know that what they are hearing is false.

Interpreter

How much credibility a message has and how widely it is spread has little to do with its actual content: key is how the interpreter perceives and processes the message. Lewandowsky et al. argue that people judge how truthful a piece of information is by evaluating the trust they have in the agent who delivered the message, as well as establishing whether they trust the network of people who also believe in the information.[42] They further identify four characteristics of fabricated content that makes it more likely to be memorable—all of which lean heavily on availability or confirmation bias:

1. The information has to be coherent and connect to a broader narrative explaining an event.
2. The information has to feel familiar, due to the interpreter's frequent exposure to it.
3. The information has to be simple and thus easier to remember than possibly more truthful, yet more complex, information.
4. The information must support worldviews already held by the interpreter.

---

[36] Lewandowsky, Ecker, Seifert, Schwarz and Cook (2012)
[37] Wardle and Derakhshan have identified seven types of information disorder content: satire or parody; misleading, imposter, fabricated or manipulated content; as well as false headlines or false context; : when headlines, visuals or captions don't support the content. Wardle (2019), Wardle and Derakhshan (2017)
[38] Janisse (1970)
[39] Tversky and Kahneman (1973)
[40] Hasher, Goldstein and Toppino (1977)
[41] Masresha, Nwankwo, Bawa, Igbu, Oteri, Tafida and Braka (2020)
[42] Lewandowsky, Ecker, Seifert, Schwarz and Cook (2012)

Busara Groundwork
RESEARCH AGENDA

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Infodemic Management in Displacement Settings: Introducing a Behavioral Lens

The WHO's recommendation of 'promoting understanding of risk and health expert advice' necessitates a deeper engagement with how behavioral mechanisms and cognitive biases influence how health advice is received and acted upon in a specific context.[43] This requires also considering what factors can contribute to the choices people make when trusting one source of information over another.

Situations of displacement offer a particularly challenging setting in which to pursue infodemic management. Displacement can occur in many different ways: people can be internally displaced within state borders or internationally across national boundaries, often settling in refugee camps. How the misinformation mechanisms outlined above play out in displacement settings is severely under-researched. There are a number of factors that might support the speculative assumption that these mechanisms are, however, relevant.

Given the often extremely uncertain circumstances of refugees and IDPs, events like the COVID-19 pandemic might contribute to or generate feelings of fear, anger and mistrust of authorities in displaced populations. The effect might be that groups of people under extreme stress (who also live in confined spaces and with limited exposure to a multiplicity of views and information) might be more likely to reject external public health recommendations, while being more likely to believe rumours they hear. Low levels of education might support beliefs that are less complex and information that is coherent in its own logic, particularly if this matches the interpreter's worldview, thus making it challenging to nuance public health messages.

Displacement settings are often quite closed environments with little opportunity to interact with outsiders, which can create information echo chambers that can turn into vivid rumour mills. These can contribute to creating the notion of an inner circle that rejects all information provided by those not part of it—or because the information is just so unsuitable to the condition that rejecting it might be a sensible protection mechanism. Unsuitable because implementing common COVID-19 health advice might be particularly challenging in dense living conditions that often additionally have limited access to water and sanitation. Social distancing is not possible in what are often crowded camps; shared water points with sometimes long wait times make frequent hand washing an onerous task at best. In addition, people have limited resources to access high-quality information; they might encounter language barriers and isolation due to lack of integration with host communities or tensions with other displaced populations. An unclear legal status and unstable livelihoods can also put displaced people in a particularly vulnerable position that

---

[43] World Health Organization (nd)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

likely contributes to how they absorb and spread information and might contribute to a cautious avoidance of any government authorities, including those that bring public health messages.

Despite the contextual differences in displacement settings in DRC, Kenya and Somalia, the content of the rumours being spread about COVID-19 seemed to be following similar trends across all three countries. This consistency might be explained by behavioral factors and cognitive biases for the spread of misinformation related to COVID-19 in displacement settings, which are consistent despite cultural differences. DRC, Kenya and Somalia more broadly share several factors that might contribute to uptake of misinformation or scientific health advice, and it seems plausible that these also apply to displacement settings, with the following mechanisms that support the spread of misinformation in place in all three settings:

- Trust in local leaders and informal information sources seems relatively higher than trust in official sources of information, especially government sources.[44]

- Channels for spreading misinformation are broadly similar across displacement settings in all three countries: Word of mouth (supported by strong oral traditions that have travelled with refugees across borders),[45] media (both national and local outlets) and social media (which has been reported to be a catalyst both in Kenya and DRC).[46]

- Fear, suspicion, anger and uncertainty—likely due to disruption in livelihoods, daily life and the experience of violent conflict and displacement—seem to fuel the spread of misinformation in refugee camps and informal settlements across the three countries.[47]

- There was particularly at the start of the pandemic a degree of scepticism around whether COVID-19 is real and dangerous, alongside distrust in preventative measures, which may be due to low visibility of the disease, limited interaction with COVID-19 testing and little reporting.

- Parts of the population tend to believe interpretations of the reasons for the pandemic that lack complexity, namely conspiracy theories or religious explanations.[48]

- A range of more trusted alternative remedies is on offer, which makes it more difficult to take on the official advice on prevention.

---

[44] Interviewee data from key informant interviews
[45] Einashe (2020 (June 10))
[46] Kazeem (2020), Prevent Epidemics (2020)
[47] Burke and Mumin (2020); Al Jazeera (2020)
[48] Abdi, Sheikh, Ali, Mwenda, Colom, Malla and Church (2020)

![Busara Groundwork logo]

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

■ The economic impact of lockdown measures may have reinforced negative perceptions of governments and host communities. Instances of police brutality in Kenya and unclear preventative health measures in DRC could have added to this, ultimately finding an outlet in attacks on health care facilities.[49]

There are context-specific patterns to what disables community understanding of COVID-19, which highlight that campaigns to promote understanding would require tailored approaches that take into account context and how behavioral mechanisms of information uptake play out in different settings.

Information Landscapes and COVID-19 in DRC, Kenya and Somalia

DRC, Kenya and Somalia share the experience that not all populations feel equally represented by the government and thus might find it hard to trust government. Nonetheless, when the pandemic started in early 2020, governments and humanitarian agencies seemed to be the main source of what was considered official information, guidelines, and recommendations related to COVID-19 in all three countries. Government and humanitarian assistance specifically for refugee and IDPs populations in Kenya, Somalia and DRC consisted of enhancing health services and psycho-social support structures, contact tracing, capacity building on COVID-19 communication for community leaders; and the distribution of masks, food, hygiene products and hand-washing facilities. Local media outlets and initiatives that seek to integrate the communities were complementing the implementation of the COVID-19 response within refugee and IDP settlements in all three countries; these seemed to be channels that were more trusted by their communities due to having built strong partnerships while maintaining their independence as best they can. Specific communication channels included local radio, community leaders, outreach workers, posters, leaflets, WhatsApp messages, megaphones, social media and dedicated websites.[50]

What people knew, how they felt about COVID-19, and how they behaved based on this information varied tremendously across three displacement settings in the DRC, Kenya and Somalia. In part, this variation can be explained by the starting point: the three countries found themselves in very different political, economic and social realities at the beginning of the pandemic. Kenya and Somalia had both also just been hit by a locust infestation, which had increased food prices and threatened food security. Somalia was in addition afflicted by devastating floods in some parts and droughts in others. DRC had only recently declared the end of an Ebola epidemic that had started in 2018. Finally, both Somalia and DRC continued to struggle with violent internal conflicts, which exacerbate

---

[49] Garda World News Alerts (2020 (18 June))
[50] UNHCR Kenya (2020), UNHCR Somalia (2020), UNHCR (2020)

Busara
Groundwork
RESEARCH AGENDA

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

civilian suffering and are a key driver of forced displacement.[51] Some of these starting points raised red flags early on for the potential to exacerbate misinformation on COVID-19: Armed conflict, natural disasters, and other epidemics contribute to specific socio-political factors that can foster the spread of misinformation.[52]

DRC

Against this backdrop, misinformation continued to be fairly common in the DRC. The phenomenon seemed to have been exacerbated by the country's history of conflict, which has created a situation of widespread distrust of authority figures and outsiders. Despite the area's prior experience with Ebola (which sparked a number of sophisticated responses, for example setting up listening clinics and sophisticated rumour tracking),[53] COVID-19 particularly in the early days was often met with scepticism by members of the public, which then turned into a wider spread of false information and conspiracy theories.

Containment efforts during Ebola outbreaks have in the past at times been met with hostility, which was another expression of the public's distrustful relationship with authority: the combination of a deadly pandemic and distrust created an emotional response in parts of the general public. Fuelled by conspiracy theories, responses at their worst catalysed into anger and even violence against health workers. This also happened because some of the necessary preventative health measures—for example the handling of corpses—were counterintuitive to, or even in violation of, local tradition and public sentiment, which made people reluctant to accept the recommendation. It further fuelled distrust that the public health measures were a covert way to eradicate local customs.

The long history of violent conflict in DRC continues particularly in the east of the country, where the political situation is fragile, as expressed through resistance against the government and armed group violence. This in turn created a continuous rumour mill regarding government intentions, which can be fuelled by disinformation—false information that is deliberately spread for strategic aims—by political opponents eager to gain wider support.

COVID-19 Information for People Displaced in DRC

In the DRC, two seemingly contradictory trends emerged that stood in the way of broader understanding of risk and health expert advice. On the one hand, real fear of COVID-19 led to stigmatization of people who tested positive, of foreigners, and of healthcare workers. People also felt threatened by the disease beyond the health aspect, associating it with armed groups. This interpretation was confounded by another circulating belief that the virus did not affect rebel groups. At the same time, there was scepticism about the reality of COVID-19 as a disease, which mirrors feelings common during the Ebola

[51] Andre, Hajzmanova and a Espinoza (July 2020)
[52] Wardle (2019), Wardle and Derakhshan (2017)
[53] Nguyen (not dated)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

epidemic and is likely due to limited access to accurate information (or sometimes any information at all). However, a marked difference between Ebola and COVID-19 was the global impact, which made it more difficult to maintain localised conspiracy theories and misinformation. While people might have initially viewed COVID-19 as a fake disease, it became more widely accepted as reality. This could be connected to the relentless repetition of prevention messages, which might have strengthened community support for prevention measures.

That means that, particularly initially, there was widespread adoption of COVID-19 prevention recommendations (especially in refugee and IDP settlements, with many communication campaigns running simultaneously). But, as both pandemic and programming were continuing, adherence was starting to fade, likely due to fatigue with government lockdown measures. Additionally, the pandemic time became a severe economic struggle and people made more decisions based on their livelihood needs, rather than health advice.

Promotional efforts of deeper understanding of COVID-19 continue to be likely to encounter an array of resilient rumours about the disease, its origins and possible remedies. Most of the rumours found early on in the pandemics in DRC can be classified into three groups:

1. **Origin of the disease.** These rumours offered explanations for where the disease came from and how one is infected—examples of such rumours include that COVID-19 was created by the Chinese government, the DRC government, or by aid agencies; that one can get infected from 5G antennas; or that COVID-19 is a satanic creation. This religious angle did not seem to have emerged as strongly during Ebola. Local health workers were suspecting that this was due to the shutting down of religious gatherings (which did not happen during Ebola), which lead people of faith to assume that the measures are in place to counter worshipping.

2. **Remedies.** Rumours about remedies seemed to be tightly connected with availability and accessibility of such remedies, for example that bananas or lemon juice cure COVID-19.

3. **Immunity.** This category of rumours established that certain groups of people have an identity-based immunity—such as that black people in general cannot become infected or that the virus cannot survive in DRC's hot weather.

DRC's volatile political situation creates a potent cocktail of distrust, a painful history of being exposed to infectious diseases, and patterns of violence. Misinformation probably comes from within the community, but opposition parties, armed groups and elites can all benefit from disinformation. Feelings of fear and anxiety, combined with contempt regarding the restrictions, were predominant factors in misperceptions during the Ebola crisis. Scepticism regarding the existence of COVID-19, low levels of confidence and

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

mistrust of the government after having suffered Ebola for many years are other narratives helping to spread misinformation in DRC.[54]

Misinformation or disinformation stirring up emotional responses led to a number of violent incidents; this happened especially when rumours fuelled racism or xenophobia. These are stirred up through established mechanisms, when, for example, armed groups take advantage of anxiety generated by a public health emergency to spread mistrust between ethnic groups and foster hostility against newcomers to strengthen loyalty within their declared ingroup. Mistrust in government, health authorities or outsiders finds outlets: Citizens were heard shouting at officials who were conducting a COVID-19 awareness campaign in Kinshasa, for example. Violent attacks against local officials and health workers were reported: on June 16, 2020, a COVID-19 treatment centre was attacked in South Kivu.[55] Foreigners leaving the country at the beginning of the COVID-19 pandemic were harassed, as they were believed to be responsible for the arrival of the virus to DR Congo.[56]

There are a number of more widely trusted agents that can play a role in stemming such actions based on misinformation: religious and community leaders, humanitarian organizations (if they have managed to develop deep and stable community ties), and health centres all play crucial roles. Radio broadly tends to be trusted. While many people use WhatsApp to stay updated, information transmitted via this channel seems to be trusted much more if a recipient had already heard similar information on traditional media, or if the information came from a trusted person. Local authorities, official government information particularly from the Ministry of Health, official media sources and specific NGOs—depending on their history within a community—were widely not trusted.

However, it is important to note that the relationship of trust between the sender and receiver (the person who gets and then interprets the information) is crucially shaped by the identity and situation of the interpreter. Differences in age, gender or status mean different networks and exposure to different sources: men have more contact with local leaders and thus are more likely to put their trust in them; women tend to trust doctors, nurses, and health workers more. IDPs prefer to speak to and listen to community leaders, but there are many open questions as to whether there is a marked difference between how men and women trust community leaders.

Kenya

Kenya has a long history of struggling to convey authoritative health information, due to its varied and uneven information landscape. Next to mainstream sources—such as

---

[54] Prevent Epidemics (2020)
[55] Garda World News Alerts (2020 (18 June))
[56] Chataigner (2020)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

accredited media—a multitude of other information sources exists that can be influential in garnering a following and spreading information. Social media is used widely in Kenya and is hugely influential in the political sphere.[57] The use of social media means that personal opinions can be shared widely, which contributes to acquiring the status of news or trust-worthy information. This phenomenon has been particularly prominent during moments of political tension, for example the 2017 elections, where it became clear that whether or not information is trusted depended on the relationship the listener had with the source. This impact of the relationship is mirrored in health information: While some people seemed to seek out more formal information, such as announcements from the Ministry of Health, others trusted those sources less. In Kenya's refugee population, the 2017 elections created much fear, which contributed to the spread of misinformation that in turn contributed to the phenomenon of increasing divides between what one considers one's personal network of belonging—one's ingroup—versus an often imagined outgroup, made up of the broad category imagined as 'the others' who hold different views and values and are experienced as threatening.

Kenya has had mixed experiences in implementing public health measures in displacement settings. Displacement camps—in this case namely Kenya's largest refugee camp Dadaab, which is home primarily to Somali refugees—offer multiple types of health services, yet people's knowledge of what is available seems to be uneven, with awareness particularly of specialized services very low.[58] While uptake of vaccinations and of the option to deliver babies in a health facility are high, particularly the latter comes with additional misinformation challenges. Here, the offer of Caesarean sections (C-sections), which are commonly deployed in these settings, seems to fuel particular mistrust in health advice by health authorities. For a delivery in a health facility, it was not uncommon for healthcare workers to prescribe a C-section. While almost 95% of women deliver in health facilities in Kakuma, there are misconceptions about C-sections: rumours are common that these are prescribed solely as a money-maker for doctors and that they are an unsafe procedure.[59] Similar beliefs fuelled by misinformation are prominent when it comes to family planning, where the rumour that family planning methods create permanent infertility is not uncommon.[60]

One's health status seems closely tied up with how secure people feel in their displacement status, with rumours circulating that resettlement decisions are made on the basis of personal health, suggesting that chronic conditions such as diabetes or asthma mean that a person is more likely to be resettled to another country.[61]

---

[57] Nyabola (2018)
[58] Key informant interviews
[59] Key informant interviews
[60] Key informant interviews
[61] Key informant interviews

Busara Groundwork
RESEARCH AGENDA

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

COVID-19 Information for People Displaced in Kenya

In Kenya, economic hardships of lockdown measures, police brutality to enforce lockdowns, and stigmatization of COVID-19 patients may have been the main enablers behind patterns of misinformation. Here, too, an environment of scepticism and lack of trust in the government has periodically triggered fear or anger, which are both powerful emotions that influence people's behaviours and potentially noncompliance with health recommendations.

Displaced people in Kenya's refugee settlements seemed to be acutely aware that violation of government measures would elicit fines and punishment. At the same time, particularly displaced populations are keen to avoid quarantine in hospital settings, as these are seen to likely elicit substantial bills. While most refugees have been observed to attempt to follow guidelines, it is also clear that in a refugee settlement, peer behavior is very influential in shaping what people do or do not do.

Kenya's COVID-19 rumours mirror patterns similar to DRC:

1. **Origin of the disease**, such as that the disease is a punishment from god; it was created by the US government to destabilize China; and that 5G antennas are the source of infection.

2. **Remedies**, such as drinking black tea or swimming in the Indian Ocean.

3. **Immunity**, with the suggestion that black people or Kenyans cannot be infected.

Kenyans have been at the receiving end of a steady stream of government messages on Covid-19 prevention, but so far little is known about what type of messaging has been particularly effective. While initial uncertainty from April 2020 onwards had fuelled the above-mentioned rumours, misinformation seemed to be more under control as the pandemic progressed —which is credit to targeted government measures to counter specific misinformation. Examples of these initiatives are the offer of comparison for verification: When receiving a government communication, people were invited to compare the information to similar information from other countries before forwarding it.

By late 2020, a fatigue had set in that likely had raised the threshold for effective community engagement. Communities advised to wash hands more often and wear masks had been faced with their own resource shortage to follow such recommendations at that point. With COVID-19 figures all over the world waxing and waning, there continued to exist competing narratives about the severity of the disease. Curfews, including those in displacement settings, were still in effect at times, but enforcement was less strict. With the highest number of new COVID-19 cases found amongst children and young people, information campaigns were targeted specifically at those age groups; however, it was less clear what exactly would allow those campaigns to be effective.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Somalia

Somalia's history of violent conflict and division has made the use of disinformation for political purposes commonplace, with specific bits of information used to fuel dissent. Media is highly politicised, which means that reporting can be unbalanced.[62] Low literacy levels pose an additional challenge when it comes to using authoritative sources of information, as most Somalis tend to get their news by relying on non-written information coming through their informal information networks and through social media. Social networks are inevitably politicised and divided. Within Somalia, IDPs can be very challenging to reach, which means that maybe disinformation is less of a concern than the large amount of people who simply have no access to any wider information at all.

COVID-19 Information for People Displaced in Somalia

Information on rumours on COVID-19 and what might be enabling misinformation continues to be scarce; this is particularly so for regions with IDPs and refugees.[63] However, initial indications were that people were not taking the pandemic too seriously—an insight derived from broad patterns of not wearing masks or not adhering to social distancing measures. Lack of knowledge seems a salient factor for the rejection of such measures. A survey conducted by Star Media Development Center found that 82% of respondents did not believe that COVID-19 exists, and that 14% lacked general awareness regarding the virus.[64] Nonetheless, a certain stigmatization occurred around those suspected of infection, which created a situation in which people were trying to hide that they were unwell. This fear of admitting one's symptoms seems to have been fuelled by not wanting to go to isolation cells that were set up to manage COVID patients.

Perceptions of COVID-19 prevention are further viewed negatively in IDP settlements due to heightened anxiety and general feelings of vulnerability. In Baidoa, residents were exposed to public health information on social distancing, but adherence was uneven, either due to not considering it a priority or practicalities making it impossible to stay away from people. The extent to which people were able to modify their lives was limited by reality and it is likely that enforcement of measures that were unrealistic in the context of people's lives could have created a broader backlash.

---

[62] Stremlau (2016)
[63] Sperber (2020)
[64] UNFPA Somalia (2020 (4 June))

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Patterns of rumours are similar to Kenya and DRC, but there were also notable differences. Rather than focusing on theories about the origin of the disease, in Somalia the nature of the disease was more prominently part of the information landscape:

- **Nature of the disease:** There was scepticism regarding COVID-19's existence or seriousness. In addition, people were blurring the lines between COVID-19 and other diseases, such as malaria, tuberculosis and dengue fever, which meant that they were unaware of key symptoms and believed that the same preventive measures (such as avoiding mosquito bites) would work for COVID-19. There was also a strong belief that the disease is not worse than the flu.

- **Origin of the disease**, such as the suggestion that government might be a source of the disease or that the disease strikes those that are not practicing their religion diligently.[65]

- **Remedies**, such as practicing one's religion for protection or consuming lemon, black pepper or ginger.

- **Immunity**, with the suggestion that only white people are affected by COVID-19 and that Muslims are generally immune.

In Somalia, religious explanations for origin and cure were prominent. A rapid April 2020 assessment by the Africa's Voices Foundation found that religious beliefs and experience of persistent violent conflict seemed to be factors supporting misinformation spread in Somalia, at least at the beginning of the pandemic. Belief in rumours and strong religious beliefs were found to be more likely among IDPs, who were also more likely to retain and spread the content and - possibly connected to their exposure and trust in misinformation - expressed more feelings of hostility, anger and resentment than the general population. Lack of knowledge was another factor that could have been affecting the population in general, as some of the people falsely assumed that COVID-19 is like other diseases that have afflicted the country in the past, like malaria or dengue.[66]

However, there is nuance in how different interpreters use information. Overwhelmingly, the most trust seemed to be placed in information coming from religious or community leaders, with particular emphasis on where to put trust seemingly influenced by gender, as men were found to more likely trust community or religious leaders, while women trusted house elders. Young women in particular seemed to be more interested in obtaining information from official sources that were less likely to argue that religion is the reason for the disease.[67] Information broadcast on the radio or other media (such as BBC Somalia) was also broadly considered credible, although little seems to be known about what

---

[65] Abdi, Sheikh, Ali, Mwenda, Colom, Malla and Church (2020)
[66] Ibid.
[67] Ibid.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

happens if two trusted sources of information offer contradictory advice. Thus, it is important to nuance that trust in radio information is complex: sometimes, trust in a particular radio message depends on the specific channel on which it was broadcast.

It also emerged that the more a piece of information was transmitted using technical terms, the less trust it elicited in the public. This general sense of distrust towards technical or scientific approaches might be an explanation for suspicion towards health workers and NGOs.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Building Resilience to Misinformation Through Behavioral Approaches

A pillar of the WHO's approach to infodemic management is to build resilience to misinformation. Resilience is an increasingly prominent concept that originated in the environmental sciences to explain the need to develop systems that would allow people, systems and the environment to 'cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure, while also maintaining the capacity for adaption, learning and transformation.'[68] The environmentally-focused definition already points to the complexity of strengthening resilience through strengthening systems. This is equally true for the endeavour to support resilience to misinformation. Humprecht et al. have argued that particularly in polarised societies, being exposed to seemingly opposed depictions of reality lowers people's ability to distinguish good information from misinformation. With polarised societies tends to come distrust in media that is supported by the outgroup; this goes hand in hand with increased social media use, which leads to less receptivity towards new information.[69] These complex and interlinked challenges point to the need to understand not just what type of misinformation people are exposed to, but also to focus more on the mechanisms through which their own resilience can be strengthened.

However, despite these additional complexities, many initiatives are focusing primarily on identifying ways to deploy factually-correct information to counter misinformation. This is also true for information on COVID-19 in the displacement settings in DRC, Kenya and Somalia. Examples of such initiatives include the use of loudspeakers or local radio stations to broadcast messages, provision of hygiene kits, and recording songs on COVID-19 prevention. In the DRC, organisations and authorities ran sensitization campaigns to emphasize how important it is to consistently adopt the public health recommendations. Because Ebola and COVID-19 are countered with similar prevention strategies, radio programmes covered the two diseases jointly to strengthen the knowledge on how one measure might work to prevent multiple deadly diseases.

Community engagement is pursued through discussions led by subject matter experts or through plays that portray key concerns of and to relevant stakeholders. These are also a way for the community to open two-way communication with authorities that allows it to get its concerns heard. Such participatory approaches are usually well received in a community. A widely shared opinion by those working to facilitate participatory approaches is that they are necessary as otherwise people feel that a solution is forced on them, which tends to lower adherence.

---

[68] Intergovernmental Panel on Climate Change (2014)
[69] Humprecht, Esser and Van Aelst (2020)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Some organisations have put in place rumour tracking committees and feedback mechanisms to collect feedback and information. If deemed significant enough, organisational teams address the concerns raised. Some organisations are also maintaining a database of rumours they have tracked to get better insight into whether or not rumours are circular or whether the occurrence of new rumours might be connected to specific events. The public is able to do quick checks of COVID-19 information through short message (SMS) fact checking. SMS are also used to curb the spread of rumours more broadly. In certain chat apps, through which COVID-19 messages are deployed, people are able to interact with others.

For any initiative to be sustainably effective and to support building people's resilience to misinformation requires exact contextualisation. This necessitates a number of steps, such as tailoring prevention messages in culturally-sensitive ways—which in turn requires detailed knowledge on exact use of language and possible subtext of particular words. To achieve this granular knowledge requires that organisations work with communities to ask for input on translations and working with an organisation to build a lexicon with culturally relevant words. Additionally, insights into how behavioral mechanisms might be culturally specific would allow further tailoring for greater effect.

Resilience Through Community Integration: Examples of Initiatives

Several initiatives to counter misinformation operationalised insights on contextualisation and the need to embed any program into culture-specific language. What these initiatives share is an emphasis on relevant languages, implementers that are part of the community that is being targeted, and behaviorally-informed approaches such as emphasizing repetition of information and exposure through multiple channels. Below is a selection of initiatives that utilised such approaches.

Several grassroots initiatives countered COVID-19 rumours within displaced communities in DRC, Kenya, and Somalia. The *Kakuma News Reflector* (*Kanere*), launched in 2008, is a refugee-led media initiative. Run by resident refugee journalists, *Kanere* reports on local developments and shares relevant information for the community. In particular, *Kanere's* journalists addressed COVID-19 misinformation by making lists of current myths circulating at the camp, or by specifying which information was being disseminated by humanitarian agencies. In addition to their traditional channels (website, print circulation at strategic locations and social media), *Kanere* has used a vehicle with loudspeakers providing updates and advice.[70]

FilmAid, a Canadian non-governmental organisation (NGO) that has since 2013 trained refugee youth in Kenya to become effective storytellers, pivoted its activities in Dadaab and Kakuma to focus on sharing information regarding COVID-19 prevention. *FilmAid* is

---

[70] Boru, Lemma and Ibrahim (2020 (6 June))

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

able to reach a large audience, thanks to multiple channels. Those that use broadcasting measures are driving around loudspeaker trucks and working with local radio stations. Social media is utilised by posting podcasts, videos and infographics. More individualised approaches are WhatsApp groups, with 140 groups receiving audio messages by May 2020, and SMS channels, with 40,000 refugee households subscribed to *FilmAid*'s SMS channel. Messages are sent in 13 languages spoken in the camps.[71] Another use of social media in Kenya is implemented by the *Kakuma Hub*, a network of young refugees supported by UNHCR, which uses social messaging apps to disseminate context-specific updates to community leaders and residents.[72]

Canadian NGO *The Sentinel Project* has a long tradition of working in displacement settings. The organisation is working with at-risk and victimized groups to tackle misinformation and prevent mass atrocities in seven different countries across Asia and Africa, including refugee settings in Kenya, such as the Kakuma refugee camp, and IDP settlements in the DRC, specifically in the North Kivu province. Recognising that misinformation can be a major factor exacerbating racial or political divides, *The Sentinel Project* encouraged community members to report rumours via SMS; these rumours were then examined and their validity verified by an independent team. The approach was piloted for the first time in Kenya's Tana Delta in 2014 and has integrated well within the community through collaborative work with local media initiatives.[73]

Africa's Voices Foundation applied a similar approach through its Risk Communications and Community Engagement strategy to address public health crises in Kenya and Somalia.[74] This strategy combines mass communication, through public service announcements and radio shows with experts, with individualised two-way communication with the public through SMS. Specifically, the personalised communications seem to be effective in fostering trust in the community and providing valuable feedback on the views they shared. To tackle misinformation on COVID-19 in Somalia, *Africa's Voices Foundation* adapted the established programme *Imaqa* (which is Somali for 'listen to me'), which originally focused on promoting gender equality and social inclusion, to deploy a rapid assessment of Somali perceptions of COVID-19 at the beginning of April 2020.[75]

Obstacles and Challenges

All of these initiatives faced severe logistical and methodological challenges, which led to disruption in the crucial human interactions that build trust and likely contribute to resilience building. The early days of COVID-19 forced organisations to pause their

---

[71] FilmAid (2020)
[72] Nezurugo and Hassan (2020 (19 June))
[73] The Sentinel Project (not dated)
[74] Africa's Voices (2020), Africa's Voices (2018), Africa's Voices (2017)
[75] Abdi, Sheikh, Ali, Mwenda, Colom, Malla and Church (2020)

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

face-to-face community engagement sessions; most other awareness campaigns also require some in-person presence. The situation slowly started to change from mid-2020 onwards, but the possibilities for reliable personal community engagement continued to be curtailed for some time thereafter. Lack of direct interaction also made the tailoring of COVID-19 information much more difficult, as messages need to be culturally appropriate and consistent—both of which tend to require close coordination with different leaders. During COVID-19, this coordination has proven to be extremely challenging. Some community members have fallen entirely out of reach when in-person engagement was not possible, primarily due to poor telephone service in some areas.

The drawn-out experience of the COVID-19 pandemic also increased scepticism: when people are hungry and facing other severe livelihood threats, it can be difficult to understand that health measures seem to be prioritized over economic needs. The economic emergency in which many people found themselves made it challenging to create positive perceptions of the need for community engagement and learning through COVID-19-related messaging. Emerging community resistance mirrors similar experiences during the Ebola crisis, with resistance to accepting messages, implementing public health advice or refusing to change behavior. Particularly the latter might increase potential for violence, more so if official advice is violently enforced. There seemed to be a specific motivation amongst IDPs to reject COVID-19 information that might pose obstacles for their return home, such as lack of health services or stigmatization of those being seen to come from areas with high incidence rates and thus posing a risk.

Conclusion: A Future Research Agenda for Better Operational Recommendations

The literature review and limited empirical work outlined above highlight a number of key recommendations particularly for humanitarian actors seeking to implement public health information campaigns in displacement settings. They also show where knowledge gaps are, as studies from different academic disciplines are often confined to a specific context and might not have used research methods that would allow identifying which behavioral mechanisms are at play in how people receive and act on information *within displacement settings,* where limitation and gaps exist on account of the confinement to a singular context. In addition, fast developments in information technology—and more specifically mobile internet use—mean that new forms of media and information exposure permanently update the WHO's articulated challenge to build resilience against misinformation.

While awareness of these cognitive biases might help in designing programmes that can more effectively manage an infodemic, it is crucial to understand how exactly these biases play out in different cultures, for different levels of stress, and for different people who find themselves in extremely uncertain and taxing situations, such as displacement. Digging

Busara
Groundwork
RESEARCH AGENDA

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

into the specifics of behavioral mechanisms is complicated and requires multimethod research, including behavioral interventions. Yet, this step is crucial in order to understand what contextually-specific pathways towards changed behaviors might be.

Insights from a Pilot Study

This paper draws on initial research conducted to delve into the questions of how misinformation on COVID-19 spread in displacement settings. It soon became clear that the challenge of implementing fast, rigorous multi-method data collection in displacement settings in a pandemic is difficult: Being able to reach people who are often experiencing extremely stressful circumstances, getting information from already-stretched humanitarian staff, paying heed to not expose research staff or respondents to additional health risks, and dealing with volatile security situations meant that the originally planned large-n collection of experimental data was not possible.

However, learning more about how behavioral mechanisms influence information uptake in displacement settings is an urgent and crucial need. A future research agenda can only be implemented through trusting and open relationships between research respondents, actors implementing information campaigns or otherwise supporting people in displacement settings, and researchers. It also requires researchers to build flexibility into their research designs and funding modalities that support such flexibility. It is only when these conditions are met that the real challenges of infodemic management can be comprehensively addressed in ways that support humans.

One method that can be adopted by practitioners to evaluate the effectiveness of an intervention in rapid and practically-relevant ways before scaling up are experimental approaches to study what behavioral mechanisms are at play when people in situations of displacement receive, perceive and interpret information. We piloted as part of this project a research design to test how this might work, combining the sending of differently-worded messages with quantitative data collection through phone surveys before and after the messages were sent. Through this pilot research design, implemented in displacement settings in the DRC and Somalia, we were seeking to test how accurately people recalled and retained messaging, how much the identification of the source of information increased its credibility, and how likely people were to pass on information. Detailed empirical experimental data beyond what we were able to gather would allow us to tackle the two identified challenges—individualization of this experience and clearer articulation of multiple barriers—with operationalizing infodemic management and therefore contributing to a discussion of 'what works' for practitioners who combat misinformation.

Future research would need to gather data that can give some indication as to how the experience of receiving health information differs between contexts and between individuals—and why exactly. And second, comparing our pilot findings on how people in

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

each setting perceive, retain and use information pointed us towards existing structural obstacles as well as helped identify which behavioral mechanisms could be used to support resilience to misinformation. Working with how humans behave and understanding how cognitive biases might need to be countered through programme design will be a crucial step towards a more sustainable resilience against misinformation on public health matters—acutely right now during and for whatever may come in the future.

Recommendations: a Future Research Agenda

A number of key challenges and research needs stand out in relation to our framework:

Determinants of agent trust and its interaction with the interpreter

- The mechanisms through which information becomes fact are not well known for this particular context. This human element of information uptake requires understanding for each specific context how trust between agent and interpreter is created, which is likely more crucial to effective messaging than the content of the message itself, as a relationship of trust determines whether a piece of information is shared, believed, acted upon or challenged in its credibility. But this insight requires a deeper understanding of behavioral mechanisms more broadly, and more specifically on how such trust is created. Humanitarian agencies or development actors thus need to design their community engagement strategies with the broader impact of trust building in mind. Many recommendations exist to contribute to such trust, such as building genuine and sustained partnerships with local actors, work with local staff and empower them to make decisions and adjust their strategies if the circumstances change. While these are often repeated, they continue to be challenging to implement. A better understanding of how trust is gained and lost (and what behavioral mechanisms come into play here) might propel humanitarian actors to understand the long-term cost to their effectiveness of not investing in trust.

- Future research questions: What behavioral mechanisms are most relevant to infodemic management and through what types of research can they be best identified in different settings? What are sources of trust and what is the behavioral impact of trust being broken? Can understanding human behavior contribute to program design that is aimed explicitly at creating a sustainable trust relationship between an agency and a community?

Links between emotional mindset of interpreter and acting on communication

- The COVID-19 infodemic impacted people's behavior, decision-making, and actions; sometimes in ways that might contribute to lengthening the pandemic. This is also because individuals have different emotional backgrounds that influence how they calculate and respond to risk. Because emotions also influence

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

whether and how people share information, understanding the link between emotions and actions better is a crucial consideration for practitioners who aim to manage and counter misinformation.

- Future research questions: do emotional responses differ depending on whether people receive information online or offline? What behavioral mechanisms are particularly significant in how people assess information?

A mental model approach to communicating with the interpreter

- How information is accessed and then acted upon changes significantly from context to context. Thus, even a global phenomenon like a pandemic influences individuals in very different ways, including in how they act on information in online and offline settings. While information campaigns necessarily need to find some sort of common denominator to address a wider public, understanding behavioral mechanisms through which the experience of a pandemic became individualised can help in contextualising interventions to better address groups of people and individuals. This also means that information is most effective if it makes space for integrating existing world views, rather than seeking to change them entirely.

- Future research questions: How do behavioral mechanisms interact with the context of an individual? How does online-to-offline transmission of information take place?

The role of individual agency

- A reason why certain misleading rumours about COVID-19 were so appealing and tended to stick was because they offered recipients of the information a sense of agency, as well as telling a coherent and credible story. This coherent narrative might be particularly crucial in situations of displacement, which comes with many elements of life that are not controllable for people.

For example, rumours on possible remedies or cures allowed people to implement those (often simple) cures without needing to make trade-offs between their health and their livelihood. This points towards the need to complement accurate health information as much as possible with a recognition of people's everyday realities and the need to offer them a sense of agency through implementing effective public health advice. Offering such advice in a coherent and plausible story seems to contribute to such information being spread more widely, thus increasing its impact.

- Future research questions: How do behavioral mechanisms play out in a displacement setting? How can information be conveyed to allow people a sense of agency and dignity when acting upon such information? Can information programs more comprehensively designed to also take into account how to buffer for possible livelihood trade-offs?

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

References

{Stremlau, G., Iginio (2016). The politics of technology in Africa: communication, development, and nation-building in Ethiopia. New York : Cambridge, Cambridge University Press.

Abdi, S., Z. Sheikh, N. Ali, I. Mwenda, A. Colom, L. Malla and L. Church (2020). "Religion, rumour and right practice" Somali views in the early days of COVID19/ Rapid Diagnostic - 3-5 April 2020 Africa's Voices.

Africa Check (2020 (23 June)). False health information in Kenya. Nairobi, Meedan.

Africa's Voices (2017). Rapid social analysis for health interventions against cholera in Somalia: Applying interactive radio for rapid social insights to shape better interventions in health crises, Africa's Voices

Africa's Voices. (2018). "Common social accountability platform – Somalia: A citizen-led solution to better governance." from https://www.africasvoices.org/case-studies/common-social-accountability-platform-somalia/.

Africa's Voices. (2020). "Civic education and engagement in Banadir: Supporting the regional government's COVID-19 response (UNICEF JPLG)." from https://www.africasvoices.org/case-studies/civic-education-and-engagement-in-banadir/.

Al Jazeera (2020). Kenya bans entry to two refugee camps hosting 400,000 people: Movement restrictions in and out of Dadaab and Kakuma camps are part of coronavirus containment measures. Al Jazeera.

Andre, C., I. Hajzmanova and M. T. M. a Espinoza (July 2020). Disasters Meet Political Unrest, Displacing Millions in Eastern Africa. Geneva, Internal Displacement Monitoring Centre.

Bikhchandani, S., D. Hirshleifer, O. Tamuz and I. Welch (2021). Information cascades and social learning (NBER Working Paper 28887), NBER.

Boru, Q., E. Lemma and G. Ibrahim (2020 (6 June)). "Letter from the editors." Kakuma News Reflector https://kanere.org/letter-from-the-editors/.

Brady, W. J., A. P. Gantman and J. J. Van Bavel (2020). "Attentional capture helps explain why moral and emotional content go viral." Journal of Experimental Psychology: General **149**(4): 746-756.

Brisset-Foucault, F. (2018). "Serial callers: communication technologies and political personhood in contemporary uganda." Ethnos **83**(2): 255-273.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Burke, J. and A. A. Mumin (2020). Mogadishu's refugees 'waiting for death' as Covid-19 reaches Somalia. The Guardian.

Carlsnaes, W., T. Risse and B. A. Simmons, Eds. (2013). Handbook of International Relations. Los Angeles, SAGE.

Chataigner, J.-M. (2020). Combattre le #COVID19 c'est aussi lutter contre l'ignorance. @Jmchataigner, Twitter.

Cotter, E. M. (2008). "Influence of emotional content and perceived relevance on spread of urban legends: a pilot study." Psychological Reports **102**(2): 623-629.

Deutsch, M. and H. B. Gerard (1955). "A study of normative and informational social influences upon individual judgment." The Journal of Abnormal and Social Psychology **51**(3): 629–636.

Ecker, U. K. H., S. Lewandowsky, J. Cook, P. Schmid, L. K. Fazio, N. Brashier, P. Kendeou, E. K. Vraga and M. A. Amazeen (2022). "The psychological drivers of misinformation belief and its resistance to correction." Nature Reviews Psychology **1**(1): 13-29.

Einashe, I. (2020 (June 10)). "In a Kenyan refugee camp, a radio host fights Covid-19 disinformation." Coda Story
https://www.codastory.com/disinformation/coronavirus-kenya-refugee-camp/.

FilmAid (2020). How FilmAid is Taking Action. The Refugee Magazine. Nairobi, FilmAid.

Frisby, C. M. (2006). "A matter of life and death: effects of emotional message strategies on African American women's attitudes about preventative breast cancer screenings." Journal of Black Studies **37**(1): 103-126.

Garda World News Alerts (2020 (18 June)). DRC: Protesters attack COVID-19 treatment center in South Kivu on June 16 /update 16.

Gunther, E. (2020 (Jun 29)). "How to Fight an Infodemic: The Four Pillars of Infodemic Management. ." J Med Internet Research **22**(6): e21820. .

Gure, F., M. Yusuf and A. M. Foster (2015). "Exploring Somali women's reproductive health knowledge and experiences: results from focus group discussions in Mogadishu." Reproductive Health Matters **23**(46): 136-144.

Hasher, L., D. Goldstein and T. Toppino (1977). "Frequency and the Conference of Referential Validity." Journal of Verbal Learning and Verbal Behavior **16**: 107 - 112.

Henrich, J. (2020). The Weirdest People in the World: How the West Became Psychologically Peculiar and Particularly Prosperous. New York, NY, Penguin (Farrar, Straus and Giroux).

Henrich, J., S. J. Heine and A. Norenzayan (2010). "The Weirdest People in the World?" Behavioral and Brain Sciences **33**(2/3): 61-83.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Hogg, M. A. and J. C. Turner (1987). "Intergroup behaviour, self-stereotyping and the salience of social categories." British Journal of Social Psychology **26**(4): 325-340.

Holmes, M. (2015). "Believing this and alieving that: theorizing affect and intuitions in international politics." International Studies Quarterly: n/a-n/a.

Horne, B. D. and S. Adali (2017). "This just in: fake news packs a lot in title, uses simpler, repetitive content in text body, more similar to satire than real news." arXiv:1703.09398 [cs].

Humprecht, E., F. Esser and P. Van Aelst (2020). "Resilience to Online Disinformation: A Framework for Cross-National Comparative Research." The International Journal of Press/Politics **25**(3): 493-516.

Intergovernmental Panel on Climate Change (2014). Annex II: Glossary. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, Cambridge University Press.

Janisse, M. P. (1970). "Attitudinal effects of mere exposure: A replication and extension." Psychonomic Science **19**(2): 77-78.

Kazeem, Y. (2020). "With over 250,000 cases, misinformation is compromising Africa's Covid-19 response." Quartz Africa https://qz.com/africa/1871683/whatsapp-is-a-key-source-of-covid-19-information-for-africans/.

Lewandowsky, S., U. K. H. Ecker, C. M. Seifert, N. Schwarz and J. Cook (2012). "Misinformation and its correction: continued influence and successful debiasing." Psychological Science in the Public Interest **13**(3): 106-131.

Lewis, I. M., B. Watson, K. M. White and R. Tay (2007). "Promoting public health messages: should we move beyond fear-evoking appeals in road safety?" Qualitative Health Research **17**(1): 61-74.

Loewenstein, G. F., E. U. Weber, C. K. Hsee and N. Welch (2001). "Risk as feelings." Psychological Bulletin **127**(2): 267-286.

Masresha, B., O. Nwankwo, S. Bawa, T. Igbu, J. Oteri, H. Tafida and F. Braka (2020). "The use of WhatsApp group messaging in the coordination of measles supplemental immunization activity in Cross Rivers State, Nigeria, 2018." The Pan African Medical Journal **35**(Suppl 1).

Mercer, J. (2010). "Emotional beliefs." International Organization **64**(1): 1-31.

Nezurugo, M. P. and S. Hassan (2020 (19 June)). On World Refugee Day, a look at how COVID-19 is affecting refugees and asylum seekers. World Economic Forum.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Nguyen, T. (not dated). "How rumours drove the Ebola outbreak."
https://www.redcross.org.uk/stories/disasters-and-emergencies/world/how-rumours-drove-the-ebola-outbreak.

Nyabola, N. (2018). Digital Democracy, Analogue Politics

How the Internet Era is Transforming Politics in Kenya. London, Zed.

Peters, K., Y. Kashima and A. Clark (2009). "Talking about others: Emotionality and the dissemination of social information." European Journal of Social Psychology **39**(2): 207-222.

Pezzo, M. V. and J. W. Beckstead (2006). "A multilevel analysis of rumor transmission: effects of anxiety and belief in two field experiments." Basic and Applied Social Psychology **28**(1): 91-100.

Pillai, R. and L. Fazio (2021 (August 3)). "The effects of repeating false and misleading information on belief. ." Preprint.

Prevent Epidemics (2020). Brief on Public Health and Social Measures Implementation in the Democratic Republic of the Congo. New York, NY, Vital Strategies.

Shelby, A. and K. Ernst (2013). "Story and science: How providers and parents can utilize storytelling to combat anti-vaccine misinformation." Human Vaccines & Immunotherapeutics **9**(8): 1795-1801.

Soto, A. (2020). Nigeria has chloroquine poisonings after Trump praised drug. Bloomberg Quint.

Sperber, A. (2020). Somalia struggles with coronavirus as infections go undetected. Al Jazeera.

Stremlau, N. (2016). "Constitution-making, media, and the politics of participation in Somalia." African Affairs **115**(459): 225-245.

Stremlau, N., E. Fantini and I. Gagliardone (2015). "Patronage, politics and performance: radio call-in programmes and the myth of accountability." Third World Quarterly **36**(8): 1510-1526.

Sunstein, C. R. (2014). On rumors. How falsehoods spread, why we believe them, and what can be done: 89-90.

Sunstein, C. R. (2019). Conformity: the power of social influences. New York, NY, NYU Press.

The Sentinel Project. (not dated). "Democratic Republic of the Congo." from **https://thesentinelproject.org/democratic-republic-of-the-congo/**.

Turner, J. C., M. A. Hogg, P. J. Oakes, S. D. Reicher and M. S. Wetherell (1987). Rediscovering the social group: A self-categorization theory., Basil Blackwell.

A Complicated Relationship:
Bringing Behavioral Science into the Fight Against Health
Misinformation in a Pandemic in Displacement Settings

Tversky, A. and D. Kahneman (1973). "Availability: A Heuristic for Judging Frequency and Probability." Cognitive Psychology **5**: 207-323.

U.S. Mission to the United Nations (2020 (June 12)). Cross-Regional Statement on "Infodemic" in the Context of COVID-19.
https://usun.usmission.gov/cross-regional-statement-on-infodemic-in-the-context-of-covid-19/.

UNFPA Somalia. (2020 (4 June)). "Data can save lives in Somalia's fight against COVID-19." from
https://somalia.unfpa.org/en/news/data-can-save-lives-somalias-fight-against-covid-19.

UNHCR (2020). Emergency Update: Ituri, North Kivu and South Kivu Provinces, Democratic Republic of the Congo. Goma, UNHCR DR Congo.

UNHCR Kenya (2020). Covid-19 Response Update - Kenya. Nairobi, UNHCR.

UNHCR Somalia (2020). UNHCR Somalia Operational Update/1 - 31 May 2020. Nairobi, UNHCR.

Vinck, P., P. N. Pham, K. K. Bindu, J. Bedford and E. J. Nilles (2019). "Institutional trust and misinformation in the response to the 2018–19 Ebola outbreak in North Kivu, DR Congo: a population-based survey. ." The Lancet **19**(5): 529-536.

Wardle, C. (2019). Understanding information disorder, First Draft.

Wardle, C. and H. Derakhshan (2017). Information Disorder: Toward an interdisciplinary framework for research and policy making, Council of Europe.

Wason, P. C. (1960). "On the failure to eliminate hypotheses in a conceptual task." Quarterly Journal of Experimental Psychology **12**(3): 129-140.

Waszak, P. M., W. Kasprzycka-Waszak and A. Kubanek (2018). "The spread of medical fake news in social media – The pilot quantitative study." Health Policy and Technology **7**(2): 115-118.

World Health Organization (2020). Cross-Regional Statement on "Infodemic" in the Context of COVID-19. C. Australia, France, Georgia, India, Indonesia, Latvia, Lebanon, Mauritius, Mexico, Norway, Senegal, South Africa. Geneva, WHO.

World Health Organization (nd). "Infodemic." WHO
https://www.who.int/health-topics/infodemic#tab=tab_1.

Figures and Tables

How Cognitive Biases May Contribute to Misinformation Spread in Displacement Settings in the DRC, Kenya, and Somalia

The table below offers a summary of how behavioral mechanisms might plausibly intersect with the information landscapes and pathways of misinformation uptake across displacement settings in the three countries.

	Kenya	Somalia	DRC
Risk-as-feelings	Feelings of uncertainty (due to restrictions and reduced income) can make people more vulnerable to retain and spread misinformation.	IDPs are more vulnerable to disinformation and also more likely to experience feelings of hostility, anger and resentment from COVID-19.	Rumours shown to be provoking feelings of anger among community members, especially in the wake of Ebola.
Confirmation bias	Heavy policing and brutality with regards to enforcing the curfew, re-enforces scepticism and anger against authorities.	Religious beliefs are held as a source of immunity.	Some reticence in receiving public health recommendations might uphold prior mistrust, where past experience of Ebola and violence soured public opinion of such communications.

Trust in information source	Trust in local leaders and informal sources is higher than in the official information from the government.	Men and older people tend to trust religious authorities more than official government sources. This could explain lack of knowledge or scepticism regarding Covid-19.	Local leaders, aid agencies and their media outlets tend to be trusted. The national government is less trusted, and armed groups and their outlets are not trusted at all.
Social norms	Heavy stigma expressed by the reaction towards COVID-19 patients and/or health workers, reinforced by individuals scared to be shunned by society.	Social expectation to continue with religious practices.	Due to definitions of ingroup and outgroup, hostility against newcomers, COVID-19 patients and foreign health workers.

| Mere exposure effect | Rumours being spread on WhatsApp groups, or channels like Facebook groups with repeated exposure to the same types of rumours including falsified remedies. | *Not enough information* | Social media can be influential for exposure for those who have access to it, but such access is not available for the groups with the lowest income and living standards, thus impact is likely limited. |

Table 1: Behavioral factors influencing misinformation retention and spread in Kenya, Somalia and DRC