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Fact-checking the Covid-19 Infodemic in Sub-Saharan Africa

Melissa Tully

(corresponding author)

Professor

School of Journalism and Mass Communication

University of Iowa

melissa-tully@uiowa.edu

<https://orcid.org/0000-0003-1850-3477>

Jane B. Singer

Professor Emerita

Department of Journalism

City, University of London

jane.singer.1@city.ac.uk

<https://orcid.org/0000-0002-5777-9065>

Abstract: This study examines fact-checking of the misinformation about Covid-19 circulating in Sub-Saharan Africa in 2020. It uses thematic textual analysis to understand the geographic scope, sources, and themes of hundreds of hoaxes from across Sub-Saharan Africa indexed in the #CoronaVirusFacts Alliance database. In addition, it explores a subset of debunked items from Nigeria to demonstrate efforts to go beyond traditional fact-checking to educate audiences about public health and media literacy, using strategies that are consistent with inoculation theory. Findings show that misinformation about “cures” and politics were major themes of Covid-19 falsehoods circulating in Sub-Saharan Africa during the first year of the pandemic. In addition to correcting false information, fact-checkers in Nigeria regularly provided public health and media literacy information in their fact-checks. Fact-checkers may epitomise a new type of journalistic actor well-suited to the chaotic world of social media and viral misinformation, as they offer both direct refutations of false information and tactics for audiences to engage in their own critical assessment of news and information.

Keywords: COVID-19, fact-checking, media literacy, misinformation, public health, Nigeria

Word Count: 8474 (text and references)

Fact-checking the Covid-19 Infodemic in Sub-Saharan Africa

As the novel coronavirus sped around the world in early 2020, rumours, hoaxes, and other bits of what the World Health Organization’s director-general quickly labelled an “infodemic,” just as dangerous as the pathogen itself (Ghebreyesus 2020), raced alongside. Around the world, including in Sub-Saharan Africa, misinformation was circulating months before the region’s first case of Covid-19 was confirmed in Nigeria.

Fact-checkers from around the world, including those in Africa, quickly geared up to tackle this infodemic by contributing to a database designed as a global Covid-19 information resource. In the coming months, the fact-checkers would be kept busy debunking everything from bogus cures to microchips in vaccines and much more. By the end of 2020, the #CoronaVirusFacts Alliance database held more than 9,000 entries, including 446 tagged for 28 countries or regions in Sub-Saharan Africa.¹ This subset of posts tagged for Sub-Saharan Africa is the focus of our thematic textual analysis.

The spread of misinformation in Africa, as elsewhere, is not new, but it has accelerated with the rapid adoption of internet, mobile, and social media across the continent and gained widespread attention during the Covid-19 pandemic (Mare et al. 2019; Ncube and Mare 2022; Wasserman 2020). Research in six Sub-Saharan African countries shows that people believe they are exposed to misinformation regularly on social media and find it quite difficult to determine the veracity of content (Madrid-Morales et al. 2021). With the onset of Covid-19, competition between hoaxes and accurate information, not only about the disease itself but also about vaccines and other preventive measures, became of grave concern in Africa. For example, public opinion data showed that only 48 percent of those surveyed in six African nations in 2021

¹ The database can be accessed at <https://www.poynter.org/ifcn-covid-19-misinformation/>.

believed they had received enough trustworthy information about vaccines; the same percentage reported they would “probably” or “definitely” get vaccinated themselves (Bodine 2021) – a dramatic drop from the 62 percent who said in November 2020 they would likely get vaccinated (Elliot 2020). Pollsters suggest the change was connected to “continued negative information about the vaccine,” much of it bogus (Bodine 2021).

This study has two goals. (1) It seeks to better understand the nature of misinformation about Covid-19 in Sub-Saharan Africa, along with attempts to address it, by examining the themes, sources, and geographic focus of items tagged as related to Sub-Saharan Africa posted to the fact-checkers’ database throughout 2020. (2) Next, by additionally analysing a subset of posts about Nigeria, Sub-Saharan Africa’s most populous country, for evidence of public health and media literacy messaging, it also considers how fact-checkers go beyond simply debunking false claims to empower audiences to make better-informed health and content decisions.

This study adds to the research on global fact-checking efforts and provides a nuanced picture of the Covid-19 misinformation landscape in Sub-Saharan Africa. In addition, by looking at the prevalence of public health and media literacy content embedded in posts from Nigeria, we are able to see if fact-checks go beyond debunking specific claims, which has been a criticism of their work. First, we review the literature on misinformation and responses to it – fact-checking, correction, and media literacy interventions.

Misinformation

As reliance on social media for news and information grows, the ability of shared misinformation to influence others’ opinions and beliefs also expands, aided by factors such as confirmation bias, selective exposure, and social ties (Tandoc 2019). Despite their potential to facilitate fast and far-reaching dissemination of factual health information, social media

platforms instead are frequently abused to spread harmful content, notably but not exclusively around vaccines (Broniatowski et al. 2018). Communities of denialists thrive in social environments, with unfounded reports, conspiracy theories, and pseudoscience generating profound consequences for public health; these range from hostility against health workers to scepticism about medical guidelines to widespread vaccine hesitancy (Wang et al. 2019). Wasserman and Madrid-Morales (2019) showed that in the three largest Sub-Saharan African democracies – Nigeria, Kenya, and South Africa – news consumers believe they are exposed frequently to misinformation online.

Findings from research on the effectiveness of post-hoc attempts to correct misinformation (e.g., fact-checking, correction, and media literacy messages) have been mixed (Hameleers 2020; Hameleers and van der Meer 2023; Walter et al. 2020). A meta-analysis of experimental studies of efforts to debunk health-related misinformation on social media suggests that “on the whole, correction can successfully mitigate the influence of misinformation,” though with caveats around the sources of the correction and the original misinformation (Walter et al. 2020). Pointing out that corrective messages are aimed at the person sharing the information as well as its recipients, Vraga and Bode (2020) indicate that effectiveness can be improved through such communication strategies as stating what is false and explaining why, as well as reinforcing the message through multiple corrections, tactics in line with the approach of fact-checkers in the database analysed here.

Recent work around assessment of Covid-19-related misinformation and propensity to share it similarly has found that corrections explicitly countering false claims with facts are somewhat more effective than simply flagging fake headlines, which itself has little effect (Kreps and Kriner 2020). Most people who say they saw misinformation about Covid-19 on social

media also say they saw a correction of it (Bode and Vraga 2021). Porter and Wood (2021) similarly found that exposure to fact-checks reduced false beliefs about Covid-19 in several countries, including Nigeria and South Africa, with most effects lasting at least two weeks.

The challenges of misinformation in Africa – as elsewhere – are complex, encompassing a myriad of diverse social, cultural, and linguistic factors (Wasserman 2020). A recent pan-African survey found that two-thirds of respondents blamed politicians and political parties for the spread of misinformation, though at least half also said responsibility lay with social media users, government officials, and news media and journalists (Conroy-Krutz and Appiah-Nyamekye 2020). Another relevant study explored more than 6 million tweets to show how Covid-19 conspiracy theories about 5G technology and Microsoft founder-turned-philanthropist Bill Gates intersected with long-term political discourses in Nigeria and South Africa (Gagliardone et al. 2021). The researchers suggested that misinformation enjoyed widespread traction because it resonated with “deep-rooted resentment toward the West, corporate interests, and what is seen as a paternalistic attitude” toward Africa (Gagliardone et al. 2021: 1).

Journalists are implicated, too; the spread of misinformation in Africa can be linked to “resource-constrained newsrooms, an ever-shifting communication ecology, realignment of the relationship between producers and consumers of content, digitization of political communication, media repression, digital literacy and competencies, and competing regimes of truth and non-truth” (Mare et al. 2019: 1). Journalists tasked with reporting on complex issues in understaffed newsrooms face substantial challenges when trying to address misinformation. For example, research in Zimbabwe (Munoriyarwa and Chambwera 2020), Nigeria (Okoro and Emmanuel 2018), and Eswatini (Lunga and Mthembu 2019) suggests that journalists struggle to navigate online environments characterised by an abundance of misinformation. Media

practitioners tasked with parsing large amounts of content to identify what is true and what is not are increasingly relying on fact-checking organizations to determine the veracity of claims (Cunliffe-Jones 2020; Cunliffe-Jones et al. 2021).

Fact-checking and Media Literacy as Responses to Misinformation

Fact-checking, monitoring, and investigating misinformation are among the most widely applied responses to misinformation, including across Africa, where various fact-checking organizations emerged in the last decade (Cheruiyot and Ferrer-Conill 2018; Cunliffe-Jones et al. 2021). Fact-checkers work to verify and debunk claims that spread online and to disseminate high-quality information, either alone or in partnership with media outlets and international organizations. Even in small countries like Eswatini, media organizations employ fact-checkers as part of their efforts to address misinformation (Lunga and Mthembu 2019). Larger, more powerful countries such as South Africa, Nigeria, and Kenya are home to multiple local and international fact-checkers, with relatively significant budgets and resources (Cunliffe-Jones 2020). As an emerging occupation, fact-checkers have developed standards and ethics intended to create a shared understanding of their job and responsibilities. More than 120 fact-checking organizations are verified signatories of the International Fact-Checking Network (IFCN) code of principles, including the organizations that submitted to the database analysed in this research (“Verified Signatories,” n.d.).

In addition to debunking false claims and offering correctives to existing misinformation, fact-checkers engage in pre-emptive strategies to address misinformation, including media literacy efforts (Oliver 2021; Theunissen et al. 2020). Such approaches are supported by inoculation research. Inoculation theory suggests that exposing people to the strategies that purveyors of misinformation use or to the weak arguments that pervade misinformation should

prepare people to reject false information when they encounter it (Roozenbeek et al. 2022).

Unlike fact-checks, which by definition come *after* false information has entered the information ecosystem, media literacy interventions and other pre-emptive approaches can occur *before* exposure to false information and can be applied to more than one specific piece of false content (Hameleers 2022). Exposure to these types of interventions should enable audiences to be more discerning when they encounter future false information (Roozenbeek et al. 2022).

Although research shows that media literacy education is limited in Africa and that audiences are not particularly well-versed in strategies for recognising bogus information, fact-checking organisations offer media literacy strategies for audiences to engage in their own critical news consumption (Cunliffe-Jones et al. 2021). The IFCN provides training and materials related to fact-checking and media literacy for organizations and practitioners, highlighting the commitment to both approaches in global fact-checking communities (IFCN). In a December 2020 report, Theunissen et al. (2020) listed “promot[ing] self-efficacy and empower[ing] individuals to take control of misinformation through media literacy and social media campaigns” as one of five strategies for fact-checkers working to combat the spread of Covid-19 misinformation. Africa Check, for example, organised a media literacy program in response to Covid-19 misinformation, including creation of local language resources (Oliver 2021), consistent with approaches used around the world. Similarly, Dubawa, a fact-checker with offices in Ghana and Nigeria, features “media literacy” on its website and includes it as an explicit organizational objective.

More broadly, fact-checkers are motivated by the complementary beliefs that facts matter, that citizens need and deserve to be properly informed, and that strengthening trust in quality information is crucial (Singer 2021). Fact-checking emerged in the United States as a

distinct journalistic form in the late 2000s (Graves 2016), just when social media was gaining traction; today, more than 400 fact-checkers operate around the world, and many of them share resources and approaches to their work through global networks, conferences, and training (IFCN, n.d.). Although both journalists and fact-checkers value truthfulness, a hallmark of fact-checkers is their overt adjudication of veracity through a transparent process of weighing evidence, claims, and counterclaims; the presentation of fact-checks typically indicates steps taken to investigate a statement and reach a decision about it (Graves 2016). Moreover, while journalists focus on accurately reporting what was said or done, fact-checkers are more interested in judging the truthfulness of the statement itself.

Although traditional journalistic transparency has been described as “limited and strategic” (Chadha and Koliska 2015: 215), fact-checkers explicitly place accountability and transparency high on their list of normative priorities (Singer 2021). This prominence is reflected in the IFCN code of principles. This code expressly foregrounds commitments to transparency of sourcing, funding and organisation, and methodology, as well as to an open and honest corrections policy. Published fact-checks typically indicate the steps taken to investigate a statement and make a decision about it, including the provision of links to sources used in reaching a judgement. Previous work suggests fact-checkers see this commitment to displaying their evidence as a key distinction between their practices and those of traditional journalists (Singer 2018).

In fact, many fact-checkers see their work as correcting shortcomings of traditional journalism (Amazeen 2019). They often believe themselves to be more trustworthy, credible and non-partisan information providers than the legacy media in their coverage area (Singer 2021), framing fact-checking as “good medicine” for an ailing occupation (Graves 2018: 623). Indeed,

some take it as part of their mission to provide an impetus for moving away from old media habits and understandings (Singer 2018).

Fact-checkers do elicit criticism, of course. Charges include selection bias and political partisanship, potentially confusing inconsistency in assessments; over-simplification of multifaceted and often ambiguous statements; and ineffectiveness at addressing larger information problems that go beyond specific claims (Mare and Munoriyarwa 2022; Marietta et al. 2015).

Of more direct concern here is whether fact-checking actually works in combatting misinformation. The answer to this question is unclear. As noted above, exposure to fact-checks has indeed been found to reduce false beliefs about Covid-19 (Porter and Woods 2021). But context matters. Hameleers (2020), for instance, concluded that although fact-checkers' use of short, factual arguments responding directly to inaccurate statements can be effective, fact-checking is most valuable when combined with media literacy interventions; although increasingly common, these are far from universal. Pennycook et al. (2018) found that explicit warnings that a headline had been disputed by a third-party fact-checker did not weaken the effects of repeat exposure to misinformation. Acceptance of the countering information in a fact-check also is affected by a user's cognitive ability, with those on the lower end of the scale unlikely to adjust their attitudes even after explicit rebuttal of the false information (De keersmaecker and Roets 2017).

In general, research suggests fact-checking can help address misinformation, but its impact is not universal and is often contingent on factors that are hard to assess. Once a bogus item has entered the unfettered and interconnected information sphere, attempts to "fix" it yield effects that can be positive – but also are significantly and potentially negatively influenced by the context in which those debunking attempts are produced and perceived (Singer 2023).

Especially on social media, the quantity and seeming indestructability of misinformation compound the difficulty.

Applying these ideas to the topic of fact-checking misinformation about the Covid-19 pandemic in Sub-Saharan Africa, this study addresses the following research questions:

RQ1: What were the key characteristics of misinformation about Covid-19 circulating in Sub-Saharan Africa in 2020, including its (a) geographic focus, (b) source, and (c) major themes?

RQ2: Looking at Nigeria as a case study, what techniques did fact-checkers employ to attempt to educate readers about (a) public health and (b) media literacy?

Method

This study draws on a subset of the more than 9,000 posts uploaded by fact-checkers around the world to the #CoronaVirusFacts Alliance database in 2020: those tagged for 25 nations in Sub-Saharan Africa. Posts tagged for the regions of East Africa (17 items) and West Africa (20 items) also were included, as were 15 posts tagged generically for “Africa.” In all, the Sub-Saharan Africa data set encompassed 446 posts about the novel coronavirus during 2020.

This database has featured in several other recent studies. Focusing on items related to the United States, Singer (2023) showed how coronavirus misinformation was responsive, reflecting various stages of the pandemic while grossly distorting the truth about it. Across the globe, Dang (2021) drew on the database in exploring responses to misinformation by authorities in Southeast Asia. The database also was central to a study by Ngai and colleagues (2022), who highlighted the conversational writing style, mimicking news and scientific reports, used by purveyors of misinformation via social media. The present study differs from these not only through its attention to Sub-Saharan Africa but also in its exploration of media literacy issues.

Each database post included the name of the fact-checking organization, such as Africa Check; the date of the post; the country or countries tagged by the fact-checker; a rating (false,

misleading, and so on); a summary of the statement (for instance, “Smoking cannabis can prevent COVID-19”); and a link to “read more,” offering an explanation of the rating and option to click to a longer discussion on the organization’s own website. At the bottom of the explanatory page was information about the source of the statement (for instance, “Facebook”).

After one researcher logged all 9,000-plus posts in a spreadsheet, organized by month and day, a separate file was created for posts tagged for any Sub-Saharan country or region.

Information recorded included:

- * The country or countries associated with each post.
- * The date of the post.
- * The fact-checker who provided the post.
- * The item rating.
- * The full text of the post.
- * The source of the information summarised in the post.
- * The “locality” of the information, with options for “Africa,” “outside Africa,” and “generic.”
- * The explanation for the rating provided.

A thematic textual analysis of these posts was then conducted to understand the themes represented across this body of misinformation. Textual analysis enables researchers to make an “educated guess” (McKee 2003: 1) about the most likely interpretations of a text, facilitating analysis of “how texts produce potential meanings and what those potential meanings are” (Hughes 2007: 249). A qualitative approach, it is useful for considering samples of textual material, as here, rather than large bodies of text; it can further be focused on selected features of that material (Fairclough 2003), enabling researchers to discern patterns (Fürsich 2009). In this

study, textual analysis of the posts was applied to track the nature of misinformation debunked by fact-checkers throughout 2020.

To conduct the analysis, both researchers first carefully read all 446 posts tagged for Sub-Saharan Africa and the explanations provided within the database, as logged in the spreadsheet for Sub-Saharan Africa. One researcher then went through them one by one, making a preliminary thematic category assignment. The second researcher then went through the posts one by one, either agreeing to her colleague's categorisation or suggesting an alternate. The first researcher next created a new version of the file indicating agreed categorisations and flagging around two dozen posts whose categorisations remained contentious. The researchers then met virtually to discuss these items and agree upon final categories. This collaborative process produced a total of 16 thematic categories, as described in **Appendix A**; 15 additional posts did not fit a theme and were categorised as "other."

It should be noted that the IFCN also categorised the posts in the database.² However, posts tagged for Sub-Saharan Africa, the topic of this study, do not track seamlessly to those categorisations, which is why the researchers chose to undertake their own analysis.

Finally, the researchers used the 119 posts tagged for Nigeria as a case study to investigate the extent to which fact-checkers went beyond merely debunking the claim to provide "public service" information about two topics crucial to combatting the infodemic: public health and media literacy. To do this, the researchers followed the links to the full explanation, located outside the database on each fact-checker's own website, and carefully read each one to identify the presence or absence of information about each topic of interest. If an explanation contained such content, the researchers recorded the relevant text, then subjected it to additional thematic

² The IFCN description of the database can be found at <https://www.poynter.org/coronavirusfactsalliance/>.

analysis to understand how the fact-checkers were seeking to educate readers beyond merely indicating the veracity of a given claim. All but five of the explanations were written in English; one of the researchers translated four that were in French, and Google Translate was used to get an approximation of the single item in Ukrainian.

Sub-Saharan Africa fact-checks: Findings from the database

Before addressing RQ1, we provide an overview of the veracity of the fact-checked claims and a description of the fact-checkers. Fact-checkers rated as “false” the majority of items: Of 446 items from sub-Saharan Africa, 412 (92.4 percent) were judged to be wholly false, with another five rated as mostly or partially false. Twenty-four (5.4 percent) were rated “misleading,” and fact-checkers reported “no evidence” for four items. In all of 2020, only one item was rated as “mostly true” by fact-checkers: a statement about the number of ambulances with mobile ventilators available in Ghana, which missed being rated completely true by the fact-checkers because it lacked context about the need for additional complementary equipment.

A total of 14 fact-checkers addressed misinformation included in the dataset. Unsurprisingly, the five with offices on the continent were the most prolific. The database included 139 debunks in 2020 from Agence France-Press (AFP) and 129 from PesaCheck; both have multiple bureaux across the region. Dubawa contributed another 78 items to the database during the year, followed by Africa Check with 58 and GhanaFact with 22. The remaining 20 debunks were from fact-checkers outside the region, most of whom simply cross-tagged an African nation in their post.

Most items were “tagged” for just one country; across the data set, 95 posts (21.3 percent) were cross-tagged for another country, either within sub-Saharan Africa (52 of the

cross-tagged items) or in other parts of the world (43 items). **Table 1** shows the total posts tagged for each sub-Saharan nation or region.

Most of the items had a local or regional angle (RQ1a). A total of 291 (65.2 percent) related directly to sub-Saharan Africa (for example, “Ugandan President Museveni has shut down the State House due to COVID-19”). Another 87 (19.5 percent) were generic, referring to some aspect of the pandemic of general interest or relevance rather than referencing any specific location (“The remedy for coronavirus is in a page in the Koran”). The other 68 posts (15.2 percent) referenced a location outside of sub-Saharan Africa but were tagged for one or more countries of interest here, typically because the misinformation was circulating locally (“China is now using special glasses instead of laboratory equipment to screen for coronavirus”).

Turning to the source of this false information (RQ1b), Facebook was indicated as a source for nearly two-thirds of all the Sub-Saharan statements in the database, 291 in all. Add in another 26 attributed solely to WhatsApp and three solely to Instagram and the company known as “Meta” was explicitly cited as responsible for 71.7 percent of all the posts in the data set – again, only one of which (attributed to a doctor who serves as the Ghanaian president’s health advisor, not to any legacy or social media site) was rated as even partly true. Another 24 posts were attributed generically to “social media”; many of these also were likely to have been circulating on Facebook or its progeny. In comparison, a total of 40 posts (9 percent) were attributed to Twitter, including 19 that also referenced Facebook. Most of the other sources of misinformation were mentioned only generically -- “websites” or “blogs” -- though the fact-checkers did occasionally call out specific sites, such as “ancsanctionedgenocide.com” or “Exclusive103.com,” or media outlets, generally digital-native ones such as newsmirrorng.com. Specific individuals were identified only four times; in addition to the relatively truthful health

advisor, the other three were government officials in Nigeria, South Africa, or Uganda. These findings align with those of Mare and Munoriyarwa (2022: 70) who found that fact-checkers in Namibia, Zimbabwe, and South Africa also viewed social media and “external news sites” as main channels of misinformation.

Turning to the thematic analysis (RQ1c), findings indicated by far the largest category of misinformation related to bogus coronavirus cures, accounting for 81 posts, or more than 18 percent of the total (see **Table 2**). The first of these appeared on the first day that posts related to sub-Saharan Africa were added to the database, January 31; it asserted, falsely of course, that “a bowl of garlic cures ‘Wuhan’s coronavirus.’” Over the next six months, fact-checkers diligently debunked another 80 misstatements suggesting coronavirus could be dispatched by everything from citrus to cocaine to “constant sex”; repeated assertions about the effectiveness of anti-malarial drug Chloroquine were repeatedly countered. Traditional African remedies, such as neem leaf, were commonly touted, as were various herbal teas. Each time, fact-checkers explained that none of these had been shown to have any effect on the coronavirus. To take just one example, in response to a May 18, 2020, claim, circulating on Facebook in Tanzania, that “a mixture of lemon, ginger and hot water can cure COVID-19,” PesaCheck provided this explanation: “While the mixture has potential health benefits, it is not effective against the disease, which is spread by a virus.”

Two categories related to politics together accounted for another 16.6 percent of database posts, with 39 posts related to government policies and another 35 about political actors such as presidents or legislators. False policy statements encompassed bogus information about everything from lockdowns to elections to immigration; seven posts related to education policy, such as government decisions about reopening schools after lockdown. Misinformation around

political actors included false claims that various government officials had tested positive for coronavirus or even died of the disease, as well as misstatements by or about politicians. Claims about politicians defying safety rules or guidelines also appeared and were debunked: AFP pointed out that a Facebook meme purporting to show the South African president and other party members “flouting lockdown rules” to celebrate “a high-profile birthday” featured photos taken years earlier, for instance.

Appearing in the data set more than 40 times apiece were erroneous claims related to the spread of the disease, its economic impact and – again as early as January – vaccines. Most misstatements about the spread of coronavirus appeared in February and March, with some wildly overstating its prevalence at the time and others grossly understating it. They typically were debunked by reporting official statistics from the World Health Organisation (WHO) or local health authorities. For instance, a Facebook post in late April claimed, “Madagascar was COVID-19 free on April 28 after registering 100% recovery for all confirmed cases.” On the contrary, PesaCheck explained, “There were 46 active COVID-19 cases on that date, according to the country’s Ministry of Public Health.”

Misinformation about economic issues accounted for nearly 10 percent of the posts. Most of these involved Africans getting money in their pockets because of Covid-19, either from national governments (“Treasury is depositing Kshs 45,000 to the mobile wallet of Nairobi residents”), donations or rebates from businesses (“In Kenya, Safaricom gives subscribers Sh2,500 COVID-19 relief”) or a forgiveness of payments for rent or utilities (“Ugandan landlords have been asked by the government to stop collecting rent as citizens stay home to fight COVID-19”). Wealthy African politicians, as well as benefactors around the world, were reported to be donating money from personal funds (“A blog posts quotes ex-president of

Nigeria Olusegun Obasanjo as saying he sent 5,000 naira each to all Nigerians”). All false, sadly, and some were additionally flagged by fact-checkers as scams, designed to persuade readers to provide bank details to receive the non-existent funds.

And, of course, vaccines were the focus of dozens of posts. Early in the pandemic, there was a spate of false claims that a vaccine already had been developed, but most of the misinformation in this category warned of the terrible consequences of vaccination. There were reports of dead children in Senegal and Guinea, and dead volunteers in Nigeria and Zimbabwe, along with dire warnings that vaccines being sent to Africa from China or America were “contaminated” and should be refused. Four posts attributed advice against accepting vaccines to former U.S. President Barack Obama, prompting Africa Check to explain in an April post that “there is no evidence of Obama warning anyone against vaccines, whether for coronavirus or other diseases. And no vaccine against COVID-19 exists yet.”

Table 2 indicates another 10 categories with fewer than 30 posts apiece. Three posing particular dangers to public health involved 28 statements containing misinformation about risk factors and safety precautions, another 10 either overstating or understating the seriousness of Covid-19, and seven claiming that Africans were inherently not at risk. While statements grossly exaggerating the effects of infection – “coronavirus is unknown and kills in seconds” – were disturbing, those claiming it need not be taken seriously posed an arguably greater threat. Fact-checkers had to explain that no, the Ghana Health Service did not announce a “100% COVID-19 recovery rate,” that Italian doctors had not confirmed that “COVID-19 is a bacterial disease” treatable with antibiotics, or that the WHO had not announced the coronavirus was “losing its potency.” And false information about risk factors potentially led Africans to worry about the wrong things – for instance, transmission via second-hand clothes, banknotes, even chickens –

and to avoid actual protective measures such as face masks and social distancing.

Misinformation about contaminated face masks was repeatedly debunked, as was the claim that their use “reduces the circulation of oxygen in the blood and can lead to death.”

Also dangerous were claims of African exceptionalism. As early as February 12, 2020, AFP debunked a Facebook statement that “black people are more resistant to COVID-19”; it resurfaced later in the month and again in March, prompting Dubawa to explain that no evidence suggested race-based immunity and to add that “anyone in proximity to an infected person is at risk of contracting COVID-19.” Other posts posited that the African climate would prevent spread of the disease – again, untrue.

It is worth noting that more than two dozen posts tagged for Sub-Saharan Africa were circulating in the region but had nothing to do with the pandemic there. Several of these items, categorised as “International,” dealt with celebrities: No, the pope was not infected, nor was Britain’s Queen Elizabeth; no, footballer Cristiano Ronaldo was not turning his hotels into coronavirus hospitals. Others were amusingly outrageous, such as the Twitter claim that “Russia released 500 tigers to keep people inside during lockdown.” (The beast pictured was in fact a lion, and needless to say, was not roaming the streets of Moscow.) Another dozen posts reflected a xenophobic view of the world; China was frequently singled out, accused of sending Africa not only infected face masks but also infected doctors, of attacking Africans, and even of trying to slaughter 20,000 of its own citizens “to stop the spread of the disease.”

And finally, a word about Bill Gates, whose foundation has been on the frontlines of combatting disease and poverty across Africa. According to 14 Africa-tagged posts, however, Gates was actually plotting to use a vaccine to, alternatively, poison Africans, “geolocate” the population (through implantation of a microchip), or “modify the brain of religious fanatics” –

when he was not busy bribing the Nigerian parliament to make vaccination mandatory. Other posts had him “arrested for biological terrorism” and divorced by his wife for wanting to “destroy the African” through vaccination. Fact-checkers pointed out the baselessness of each claim, one by one by one.

Nigeria fact-checks: Findings about public health and media literacy information

In addition to examining all Sub-Saharan Africa posts contained in the database, the researchers followed links to the full explanation, located on each fact-checker’s own website, for the 119 posts tagged for “Nigeria.” Nigeria is the region’s most populous nation, and these posts account for around 27 percent of all the items studied here. Of interest was the extent to which fact-checkers went beyond simply debunking misinformation – the primary emphasis in the brief explanations within the #CoronaVirusFacts Alliance database itself – and provided information to educate readers and promote action related to two key areas of concern: public health and media literacy (RQ2).

All but four of the Nigeria-tagged posts were from three of the main fact-checkers operating on the continent: Dubawa, with offices in Ghana and Nigeria (50 Nigeria posts, 42 percent of the total); AFP, the French wire service with 13 African bureaux, including one in Lagos (46 Nigeria posts, 38.7 percent); and Africa Check, with main offices in Nigeria, South Africa, Kenya, and Senegal (19 Nigeria posts, 16 percent). Two more were from PesaCheck, which operates in 12 African nations including Nigeria, with one apiece from Spanish fact-checker EFE Verifica (cross-tagged for Spain) and Ukrainian fact-checker Vox Check (cross-tagged for Ukraine).

Two passes were made through the Nigeria data, first to identify posts containing any public health or media literacy information at all, then again to closely examine educational

elements. In the case of public health, basic information related to the extent, transmission, or impact of the novel coronavirus, while educational elements included contextual information – for instance, as described above, explaining that alleged “cures” might contain peripheral health benefits but were not recommended treatments for Covid-19 – as well as reiteration of safety measures recommended by health organisations such as the WHO. In the case of media literacy, basic information described the tools that fact-checkers used to assess credibility, while educational elements included details about “red flags” signalling a lack of credibility, along with admonitions to users to avoid sharing dubious material.

Results indicated the great majority of explanations indeed went beyond debunking to provide both public health and media literacy information as broadly defined. The researchers identified 87 explanations (73.1 percent of the Nigeria posts) that contained public health information (RQ2a) and 97 (81.5 percent) with reference to media literacy (RQ2b). Three of the full explanations could not be accessed because links from the database were broken.

Public health information: Particularly in the early months of the pandemic, fact-checkers provided frequent updates about the number of cases, both globally and within Nigeria. The Nigeria Centre for Disease Control (NCDC) reported the country’s first case of coronavirus on February 27, 2020, with the first death on March 23, 2020. Fact-checkers routinely dealt with exaggerated casualty counts by citing official figures from public health authorities, primarily the WHO for global data and the NCDC for national statistics.

They also provided extensive contextual information about public health throughout the year. Debunks of alleged cures for Covid-19 – rampant in the database, particularly early in the pandemic, as described above – commonly included a clear description of the benefits (if any) or touted products or practices, followed by a warning that health authorities had not approved them

for treatment of the novel coronavirus. Garlic and lemongrass tea, for example, have scientifically supported health benefits, and gargling salt water can relieve discomfort of a sore throat – but, fact-checkers repeatedly stressed, they do not cure coronaviruses.

Other alleged cures were even more outlandish. An entertaining example is Dubawa's debunk of the March 2, 2020, statement that "constant sex kills coronavirus." On the contrary, its headline warned, "sex is more of a risk factor than a cure"; the writer went on to carefully explain that the claim was "counterintuitive," as "close contact with an infected person will expose the partner to the disease." Perhaps the most infamous non-cure was the anti-malarial drug Chloroquine; fact-checkers around the world repeatedly debunked claims of its efficacy. A March 21, 2020, explanation from AFP, for example, explained that although Chloroquine is used as a medicine in parts of Africa and may help combat intestinal parasites, overuse can be fatal, and experts emphasise that it plays no role in the battle against Covid-19. The fact-checker then warns that the WHO urges people to remain on guard against "remedies" unsupported by scientific evidence, which could endanger lives, and concludes by stressing that hand-washing and social distancing are primary measures to prevent infection.

Fact-checkers incorporated these guidelines from the WHO and the NCDC in their explanations extensively and in various ways, including through graphics, quotes from public health sources, links to external sites, and repetition in their own explanatory text. Indeed, the guidelines were commonly reiterated even in debunks of items about other topics, such as an April 6, 2020, Africa Check explanation of a false claim that the NCDC had spent the equivalent of \$2.7 million on text messages about Covid-19. The explanation ended with a quote from the agency's director-general, urging Nigerians to "stay safe, keep washing your hands, maintain a safe social distance and hygiene. In the end, we will overcome it."

Media literacy information: Fact-checkers relied heavily on reverse image search tools to debunk visual misinformation – notably to identify when an image first appeared online, which typically turned out to be months or even years before the emergence of Covid-19 – and told readers which tools they had applied, such as those from Google or TinEye. These tools can be used by anyone, and the references therefore served as an indirect reminder of media literacy techniques. Fact-checkers also commonly explained their own efforts at verification through keyword searches, examination of material archived online, and cross-checks against information from civic authorities and well-established media outlets – all things users could do themselves, given sufficient time and diligence.

But of greater interest here was the common practice of overtly highlighting the red flags that marked a source as not trustworthy, warning signals that require little more than scepticism to recognise. Dubawa was especially scornful of the dreadful writing that is a hallmark of misinformation in blogs and on social media, reminding readers that “often, fake news platforms commit horrendous spelling and grammatical errors.” Missing information also could be a warning sign: Throughout the year, fact-checkers highlighted the tell-tale absence of identified sources, of logos on information purported to come from official entities, or of any indication of when or where an alleged event occurred.

Another commonly made point about media literacy was that major news was highly unlikely to be broken by bloggers or social media users – yet ignored by established news organisations. Did Vladimir Putin back a U.S. decision to freeze funding of “evil” WHO? If he had, Africa Check pointed out on March 30, 2020, his decision would not be reported only through a “poorly written five-paragraph article” on a Nigerian website – and unreported “by any credible media organisation.” Did Melinda Gates divorce her husband for wanting to “destroy”

Africa? Surely, Dubawa said on April 8, 2020, “any information of this magnitude about the world’s richest couple would hit the headlines of major news platforms, not just social media outlets, least of all from users with no credibility or track record.” Did Nigeria’s president and his chief of staff leave the country after contracting Covid-19? “Baseless conjecture,” warned Dubawa, urging readers to “always take caution in what information you are reading or believing. Credible news platforms are ... a go-to for relevant updates.”

Finally, fact-checkers urged readers not to share information without careful consideration of its merits. In its April 1, 2020, debunk related to Nigerian political leaders, Dubawa pleaded: “Before you share anything be sure it is not fake news and when in doubt, don’t share.” A few days later, debunking a claim that China was sending “infected” masks to Africa, Dubawa again stressed the need to verify messages before sharing, especially chain messages with multiple claims because “the chances are that the author intermingled a lie with truths placed out of context.” Fact-checkers also commonly cited sources who urged people not to add to the infodemic. For example, AFP seemed to be a having a bit of fun in its April 25, 2020, debunk of a claim that a British vaccine volunteer had died – quoting her as saying “I am very much alive. I’m having a cup of tea” – before citing an Oxford University statement urging people “not to give these [false reports] any credibility and not to circulate them.”

Discussion

In response to RQ1, our findings show that misinformation about “cures” and politics, encompassing policy and political actors, were major themes of Covid-19 falsehoods circulating in Sub-Saharan Africa in 2020. The focus on remedies is not surprising, given the over-representation of claims made early in the pandemic, when “cures” were being offered by everyone from doctors to herbalists to conspiracy theorists to presidents. The focus on cures

waned during the year, but it remained a prominent topic as new and creative falsehoods appeared. The focus on politics might also be expected, given the outsized role of political actors in African states and the centralised nature of such policies as countrywide lockdowns.

Somewhat more surprising is that misinformation about Bill Gates was not more prominent in the fact-checking database, which is contrary to other research findings that conspiracy theories and misinformation about Gates was common on social and mainstream media throughout Africa (Gagliardone et al. 2021; Mare and Munoriyarwa 2022). Fact-checkers interviewed by Mare and Munoriyarwa (2022) discussed debunking claims about Gates and other common claims. Continued research with African fact-checkers is needed to understand the factors that influence their decisions about which misinformation to debunk.

Nearly 35 percent of posts included in our dataset were not about a specific African country or region but were still tagged as relevant to Africa. This finding suggests that centre-periphery dynamics may be influential in a fact-checking context. Historically, the West has featured far more extensively in African news coverage than Africa does in Western media, and perhaps this imbalance persists in fact-checking. Future research should continue to explore these dynamics.

The overwhelming majority of false claims in the database came from social media, suggesting Africans are quite right to see it as contributing to the spread of bogus information (Conroy-Krutz and Appiah-Nyamekye 2020). And Facebook was by far the greatest offender, which might be at least partly attributable to the company's efforts to promote both Facebook and WhatsApp in the region, including providing low-bandwidth or free access to their platforms on mobile phones. These efforts to penetrate markets in the Global South, including across Sub-Saharan Africa, are well documented and not without criticism and controversy (Nothias 2020).

Efforts by “Meta” to combat misinformation, a goal that Facebook seems to have rather spectacularly failed to meet, should be carefully tracked in follow-up research. Of course, our data do not tell us where the false claims originated; the creation, distribution, and circulation of misinformation is a complex process involving multiple actors and actions.

In response, fact-checkers offered an antidote by thoroughly debunking a wide range of misinformation and by encouraging audiences to be their own fact-checkers, for instance by providing media literacy tips, as our exploration of the Nigerian case study in relation to RQ2 indicates. That fact-checkers also incorporated extensive public health information in their explanations further speaks to their efforts to encourage members of the public to protect themselves from the effect of both the pandemic and infodemic. Although our findings cannot speak to the effectiveness of providing media literacy and public health information, inoculation research supports this kind of approach. The sheer volume of misinformation circulating online, in Sub-Saharan Africa as elsewhere, suggests fact-checkers alone can never keep up. One approach, as others also have indicated (Cunliffe-Jones et al. 2021; Oliver 2021), may well be to encourage more savvy media use by members of the public.

As with all research, this study has limitations. Nigeria and Kenya were over-represented in the database and therefore in the data set, perpetrating the problem of Africa-based research focusing heavily on powerful, Anglophone countries (Cheruiyot 2021). Also significant is that although the IFCN provided versions of the database in Spanish and Portuguese, the fact-checks examined here were in English, as were all but a small handful of the explanations explored on the fact-checkers’ own websites. Our analysis cannot shed light on misinformation circulating in other languages (Wasserman 2020) or on how or whether it was debunked; while many Africans speak English, other languages are spoken widely. Research into non-English misinformation is

desperately needed, especially given mounting evidence that social media sites do little to counter it. Finally, this research cannot provide insight into fact-checking processes, or similarities and differences between their approaches in Sub-Saharan Africa and elsewhere, as we do not examine the experience of fact-checkers themselves. Additional interview or observational research should continue to prioritize the work of fact-checking.

That said, fact-checkers may be ideally, perhaps even uniquely, suited to a social media age in which false and misleading information circulates widely, freely, and constantly. Though further research is needed, fact-checkers as new entrants to the field may be perceived as holding authority, independence, and legitimacy not accorded to legacy media outlets, which are too often seen as pawns of political elites.

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Appendix A: Coronavirus database themes, sub-Saharan Africa posts

THEME	DESCRIPTIONS and EXAMPLES
AFRICAN EXCEPTIONALISM	Posts containing statements about African specificities such as skin color or climate. <i>EXAMPLE: "African skin and blood is [sic] resistant to coronavirus."</i>
CRIME	Posts containing misinformation about crimes, including fraudulent and violent acts, related to the coronavirus pandemic. <i>EXAMPLE: "Worshippers were beaten by policemen because they gathered in a church"</i>
CURE	Posts providing misinformation about preventing or treating Covid infection <i>EXAMPLE: "A viral image suggests that cocaine kills coronavirus."</i>
ECONOMY	Posts referencing local or global economy, including misinformation about benefit payments, cash-back schemes, and effects on business(es) <i>EXAMPLE: "In Kenya, Safaricom gives subscribers Sh2,500 COVID-19 relief."</i>
GATES	Posts about Microsoft billionaire and global philanthropist Bill Gates <i>EXAMPLE: "Bill Gates is creating a vaccine against the COVID-19 which would geolocate the population."</i>
INTERNATIONAL	Posts referencing things happening outside Africa <i>EXAMPLE: "Photo shows Italians prostrating themselves and praying to Allah, during the coronavirus crisis."</i>
MANUFACTURED	Posts claiming coronavirus is manufactured or a direct result of human activity. <i>EXAMPLE: "Dr Robert Gallo confessed to being forced to create a virus to wipe out the African race"</i>
POLITICS: Policy	Posts referencing government policies related to Covid-19, including educational policy. <i>EXAMPLE: "The RDC government canceled every future exams for pupils, because of coronavirus"</i>
POLITICS: Political actors	Posts about government leaders or other political figures. <i>EXAMPLE: "'Ghana's president backs conspiracy theories about COVID-19."</i>
RISK	Posts referencing misinformation about risk factors and safety precautions, including quarantine. <i>EXAMPLE: "Imported second hand clothes from Europe, Asia or America could spread the novel coronavirus in Africa."</i>
SERIOUSNESS	Posts claiming that Covid-19 is not a serious disease, as well as posts that either grossly underestimate or grossly overestimate its impact. <i>EXAMPLE: "COVID-19 victims suffer infertility, loss of smell, stroke and lungs dysfunction after treatment."</i>
SPREAD	Posts misreporting the spread of the coronavirus, including false statements about the rise or prevalence of cases <i>EXAMPLE: "No coronavirus in Nigeria yet, according to pastor."</i>
TECHNOLOGY	Posts connecting coronavirus to conspiracy theories rooted in the misuse of technology, primarily but not exclusively related to 5G <i>EXAMPLE: "5G wireless technology created the COVID-19 pandemic."</i>
TESTS	Posts containing misinformation related to coronavirus tracing or testing <i>EXAMPLE: "Holding your breath can let you test whether you may have COVID-19."</i>
VACCINES	Posts referencing the availability, use, or effects of coronavirus vaccines <i>EXAMPLE: "A photo circulating and rumours making rounds suggest the COVID-19 vaccine leads to penis enlargement"</i>
XENOPHOBIA	Posts containing misinformation about people of diverse nationalities (particularly Chinese), religions, or ethnicities. <i>EXAMPLE: "China seeks approval from the court to kill over 20,000 coronavirus patients."</i>
OTHER	Posts that do not fit other thematic categories or that encompass multiple themes in one post. <i>EXAMPLE: "Monkeys are stealing food from a hospital in South Africa."</i>