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Pharmaceutical messianism and the COVID-19 pandemic

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ABSTRACT

As part of their populist performances during disease outbreaks, public officials and politicians tend to offer ‘miracle cures’ or ‘wonder drugs’ that can supposedly treat or prevent the disease in question. This article analyzes contemporary instances of what we call ‘pharmaceutical messianism’ and proposes four characteristics for this phenomenon, namely, that it: (1) emerges during times of extraordinary health crisis; (2) builds on pre-existing knowledge, practices, and sentiments; (3) borrows from medical, often heterodox, authority; and (4) involves accessible, affordable, and/or familiar substances. Demonstrating the analytic value of our framework, we present three case studies, constructed using academic and journalistic sources, during the COVID-19 pandemic: hydroxychloroquine in France, ivermectin in the Philippines, and Covid-Organics in Madagascar. We conclude by identifying some implications of our findings on public health and avenues for future research.

1. Introduction

Throughout the COVID-19 pandemic, one common response among world leaders and politicians has been to promote pharmaceuticals and other substances that can supposedly treat or prevent the viral disease—from hydroxychloroquine (Casarões and Magalhães, 2021) to ivermectin (Turkia, 2021); from herbal remedies in Madagascar and Venezuela (Moleiro, 2021; Nordling, 2020) to cow dung and urine in India (RFI, 2021). Scholars have identified these promises of a ‘miracle cure’ or ‘wonder drug’ as part of the ‘simplification of the pandemic’ that constitutes the ‘medical populism’ of political actors (Lasco, 2020).

Such promises are nothing new, arguably harking back to medieval times when rulers were regarded as supreme beings with healing powers (Murray et al., 2016). Contemporary world history is likewise rife with instances of state leaders or politicians advocating for miracle cures—especially for conditions that have no known cure. Most prominently, prior to the advent of antiretroviral therapy (ART), various politicians from the hardest-hit Global South countries promoted a range of supposed cures against HIV/AIDS (e.g. Cassidy, 2009; Obadare and Okeke, 2011).

This article interrogates how these instances of what we call ‘pharmaceutical messianism’ emerged during the COVID-19 pandemic. Why did those politicians end up endorsing those specific cures? What were

the antecedents before their endorsement, and who were the other actors involved? In other words, what were the conditions of possibility that paved the way for a certain substance to be held up as panacea for COVID-19?

We begin by revisiting the literature on the politics of epidemics, and how pharmaceuticals have figured in them. Drawing on these bodies of work, we propose four characteristics of pharmaceutical messianism, namely, that it: (1) emerges during times of extraordinary crisis; (2) builds on pre-existing knowledge, practices, and sentiments; (3) borrows from medical, often heterodox, authority; and (4) involves accessible, affordable, and/or familiar substances. We then offer three case studies to illustrate manifestations of pharmaceutical messianism representing a range of economic, cultural, and geographic contexts during the COVID-19 pandemic. Finally, we reflect on the implications of this phenomenon for public health and health communications, particularly in times of health crises.

2. The ‘political efficacy’ of miracle cures

Epidemics and other health crises magnify people’s need to concretize illness by tapping into their entrenched fears and anxieties for survival (Taylor, 2019). Amid prevailing perceptions that health and state authorities “lack the capacity to resolve all medical challenges”

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(Obadare and Okeke, 2011, p. 193), people turn to “a range of nostrums, no matter how dubious, [just] to avoid becoming infected” (Taylor, 2019, p. 30). In those instances, pharmaceuticals—be they unproven cures or experimental treatments—become “potent symbols and tokens of hope” (Whyte et al., 2002, p. 5): an observation borne by the historical record, from the flu pandemics of the past two centuries (Freckelton, 2020) to contemporary viral outbreaks like Ebola (Calain, 2018) and HIV (Obadare and Okeke, 2011).

Paying particular focus on the HIV/AIDS pandemic, we find how these cures and treatments evince two particularities. First, a political actor’s hand is crucial to a cure’s popularity, demonstrating how “scientific ‘truths’, claims and methods are always co-produced with particular institutional, social, and political commitments” (Cassidy, 2009, p. 561). Sometimes, the politicians themselves are at the core of the cure: Gambian President Yahya Jammeh’s herbal concoction against HIV, for example, was literally called ‘the President’s cure’, peddled unequivocally as his own creation (Cassidy, 2009). Often, however, these politicians *build upon* a preexisting cure or practice that originates from some scientific establishment, is endorsed by (ostensibly) biomedical authorities, or plucked from local practices. Regardless of origin, these cures inevitably gain political capital as more and more people use them, thereby transforming into “resources with political value” (Whyte et al., 2002, p. 5). For instance, the AIDS cure of Billy Goodson Chisupe—a farmer from a Malawian outpost—reached almost a million people in 1995 precisely because it was endorsed by religious leaders, health institutions, and state officials (Doran, 2007). The Kemron drug of the Kenya Medical Research Institute was backed by the country’s president at the time (Hyden and Lanegran, 1993). In Iran, former President Mahmoud Ahmadinejad championed a cure concocted from seven native herbs by his country’s top HIV research center in 2007—while censoring dissenting scientific experts (Amon, 2008). And through publication in the journal *Vaccine*, Dr. Jeremiah Abalaka’s HIV vaccine in Nigeria was imparted a degree of clinical soundness despite the subsequent backlash it received in the country (Obadare and Okeke, 2011).

Alongside the question of *who* supports these cures is the question of *what* they represent. For the HIV pandemic in the Global South, these cures primarily symbolized both resistance to *and* liberation from the hegemony of so-called Western biomedicine and the lingering influence of colonialism. Jammeh’s ‘President’s cure’, for instance, appealed to “pan-Africanist” sentiments by constructing foreign-led HIV treatment efforts “as part of a continued Western project of colonial and post-colonial domination” (Cassidy, 2009, p. 569), while simultaneously drawing on “understandings of disease and therapy rooted in herbal and Islamic notions” (p. 567). Similar anti-colonial attitudes informed the popularity of Ayurvedic HIV treatments in India in the early 2000s (Van Hollen, 2005). In Cameroon, the patronage enjoyed by the HIV vaccine Vanhivax drew partly upon ideas of a homegrown vaccine emblematic of a genuinely African scientific identity (Lachenal, 2017). And in the case of Dr. Abalaka’s vaccine, the public embraced it as a lifesaver largely because it arrived at the right time, when there was “virtually complete inaccessibility [of] life-prolonging [HIV] medicines ... in Nigeria” (Obadare and Okeke, 2011, p. 201).

Taken together, these two particularities constitute what we term as the ‘political efficacy’ of pharmaceuticals, or their ability to alter social narratives—and, consequently, public health policy—according to the political circumstances in which they feature as ‘vehicles of ideology’ (Nichter and Vuckovic, 1994). This political efficacy, we posit, underpins the propensity of pharmaceuticals to be wielded as political tools in times of health crises, figuring in the ways in which politicians ‘spectacularize’—and subsequently respond to—medical emergencies (Lasco and Curato, 2019).

3. A framework for pharmaceutical messianism

Following Moffitt (2016) definition of populism as a ‘political style’,

Lasco and Curato (2019) introduced the concept of ‘medical populism’ as an analytical tool for health crises. The crux of this concept is “the politicization of a health-related issue” or its portrayal as “a public emergency that demands immediate response,” which medical populists—who are almost always politicians—achieve by: 1) pitting the ‘virtuous’ public against the ‘establishment’ or ‘dangerous others’; 2) dramatizing the crisis through rhetoric and spectacular responses; and 3) simplifying crisis discourse while invoking knowledge claims (pp. 2–3).

Our framework regards pharmaceutical messianism as a manifestation of medical populism. As recent and ongoing pandemics have illustrated, pharmaceuticals have become more and more incorporated into the performative repertoire of politicians—what Casarões and Magalhães (2021, p. 207), who examined the popularity of hydroxychloroquine in the United States and Brazil during the COVID-19 pandemic, aptly described as “the populist tendency to offer simple solutions to complex problems.” In so doing, these political actors can also craft an imagined antagonism between ordinary, ‘unscientific’ lay people and the ‘academic elite’ of critical health experts. In this sense, the political efficacy of medicines becomes foundational to pharmaceutical messianism.

Drawing from the aforementioned points, we propose four characteristics of pharmaceutical messianism to understand further how a certain substance can penetrate popular discourse and gain widespread acceptance to the point of being hailed a miracle cure:

3.1. Pharmaceutical messianism arises during moments of extraordinary crisis

Not all health emergencies provide fertile ground for pharmaceutical messianism: This phenomenon occurs specifically during unprecedented or extraordinary crises, such as those enumerated earlier, when even scientific institutions are at a loss for answers. Scrutinizing Donald Trump’s presidency, Schneiker describes how politicians can portray themselves as saviors with “exceptional qualities that allow [them] to ... save [their] followers from an emergency” (2020, p. 863). Part of this ‘messianic’ performance, Schneiker continues, is claiming to have the solution to this emergency. In the context of pharmaceutical messianism, this quick and easy fix comes in the form of a wonder drug, which easily gains public acceptance no matter the level of evidence as to its benefits because of medical populism’s tendency to disregard ‘elite’ scientific expertise (Lasco, 2020). As this drug gains traction in a given political milieu, demand for it grows alongside demands for its legalization and provision, via methods discernible in most other populist performances of crisis (Moffitt, 2015)—for instance, through highly publicized distributions or dramatic performances of contradicting health experts to highlight its supposed benefits.

3.2. Pharmaceutical messianism builds on pre-existing knowledge, practices, and sentiments

Pharmaceutical messianism does not exist in a vacuum: It must come from *somewhere* and/or build upon *something*. This can be in the form of existing biomedical knowledge, like drugs that are already used for existing diseases, but which are now being forwarded as solutions to the current crisis (e.g. quinine during the Russian and Spanish flu pandemics [Freckelton, 2020]). It can also be in the form of alternative or heterodox knowledge, as in the case of food cures derived from traditional medical (or quasi-medical) ideas and practices (Bitar, 2020). Or, as with the HIV pandemic, pharmaceutical messianism need not even be rooted on pre-existing knowledge; it can flourish just by feeding upon pre-existing public sentiment. Often, a miracle cure taps upon the zeitgeist, whether it be the interminable undercurrent of anti-colonial sentiment, like in Ghana and Cameroon (Cassidy, 2009; Lachenal, 2017), or public desperation for an immediate solution, as in Nigeria (Obadare and Okeke, 2011). What is crucial to this characteristic is that

miracle cures do not achieve instant popularity; rather, they: a) usually already exist in some prior form before the pivotal act of alteration and redefinition, and/or b) occur in the ripe environment at the right time in history.

3.3. Pharmaceutical messianism borrows from medical, often heterodox, authorities

Pharmaceutical messianism borrows from epistemological authority—medical, scientific, or otherwise. Often, this authority can be characterized as medical heterodoxy, which means it is not so much a categorical rejection of intellectual expertise as it is an argument for ‘counter-knowledge’ or an “objective counter-expertise” (Ylä-Anttila, 2018, p. 358). As demonstrated by some of the early HIV cures (Obadare and Okeke, 2011), medical heterodoxy is not always an outright invalidation of orthodox biomedicine: More than a statement of what *should* be, it is a proposal for what *could* be. However, by categorizing pharmaceutical messianism as a decidedly medical-populist phenomenon, we invoke medical heterodoxy to pertain specifically to individuals who push for ‘counter-knowledge’. We follow Casarões and Magalhães in labeling these individuals ‘alt scientists’, but use that label as an umbrella term to include licensed physicians, politician-doctors, elected officials, celebrities, and conspiracy theorists—people “who publicly advance scientific claims at a crossroads between partial evidence, pseudo-science, and conspiracy theories” (2021, p. 199)—while also acknowledging the possibility that certain cures can have the support of a country’s public health establishment. In any case, for any substance to gain widespread popularity, it has to originate from *someone* of considerable influence, or must at least have the backing of such authority.

3.4. Pharmaceutical messianism involves accessible, affordable, and/or familiar substances

Two considerations underlie this characteristic. First, professional healthcare, including prescription pharmaceuticals, still remains inaccessible to most people—financially, logistically, politically. Second, unprecedented health crises, as mentioned earlier, are moments of great uncertainty for scientific institutions, who are faced with a problem for which they have no ready solution—and consequently, moments of great desperation for ordinary people, who become more willing to try out any promising cure (Taylor, 2019; Freckelton, 2020). Pharmaceutical messianism taps into this uncertainty and desperation, while simultaneously subverting the inequitable status quo, by presenting the public with an accessible, affordable, and/or readily available cure. This can therefore be a drug sold cheaply in pharmacies to treat other diseases, but which political discourse now presents as a potential cure for the crisis; a substance that provides an alternative to expensive, hospital-based care; an experimental or unproven treatment railroaded for widespread use and/or rendered available extensively because of political pressures; or even a prescription drug that garners ‘emergency use authorization’ or is now allowed to be sold over-the-counter by those same pressures.

4. Illustrative examples

We present three case studies depicting pharmaceutical messianism during the COVID-19 pandemic. Like Lasco and Curato (2019), we employ a descriptive approach: Without adjudicating on the scientific efficacy of the concerned substances, we plot their emergence as populist tropes based on our aforementioned framework and alongside their respective outbreak narratives. The narrative reconstructions for each substance were derived from academic sources (e.g. journal articles) and targeted online searches of journalistic material (e.g. major periodicals for each country, government releases), which may not conform to scholarly language but nonetheless portray elements of

pharmaceutical messianism in their vocabulary.

After an online survey of the miracle cures that have been forwarded by world leaders, we selected three such cures based on geographic diversity. The first example depicts the rise of hydroxychloroquine in France at the start of the pandemic in 2020. The second, set a year later, tackles the popularity of ivermectin in the Philippines amid a deadly surge in early 2021. Finally, the third example shows how Covid-Organics in Madagascar not only tapped into the urgent need for a cure, but also into longstanding sociocultural sentiments that arguably trace their origins to the HIV pandemic in Africa. Sources from France and Madagascar that were in French were translated using Google Translate. Table 1 summarizes these findings according to our framework.

4.1. Hydroxychloroquine in France

Long a mainstay of treatment for malaria, lupus, and rheumatoid arthritis, hydroxychloroquine came to prominence in France in March 2020, when the whole world was still at a loss with regards to treating the illness. By then, disease clusters were beginning to overwhelm the local healthcare system (e.g. Le Point, fr, 2020). When the administration of President Emmanuel Macron finally enacted a nationwide lockdown on March 17, the country had already tallied over 6600 COVID-19 cases, including 148 fatalities (Rose and Lough, 2020).

During this time, the established physician Didier Raoult pioneered the push for hydroxychloroquine in his country. Raoult co-founded IHU-Méditerranée Infection, the university hospital institute in Marseilles that served as his research base (Sayare, 2020). Relevant to the pandemic, his earlier investigations on hydroxychloroquine’s curative potential for fatal illnesses like Q fever essentially revolutionized treatment regimens. But Raoult was also a divisive figure known for “assailing orthodoxy” (Sayare, 2020). Alongside his contributions to microbiology and infectious diseases, he had compared epidemic modelers to “charlatans” (Mary, 2012) and repeatedly clashed with the Parisian medical community (Campion, 2020). In fact, his endorsement of hydroxychloroquine was grounded partly on his criticism of the country’s academic institutions as being run by bureaucratic “methodology maniacs” with no sense of urgency in using the widely available and easily manufactured drug for COVID-19 (Berlivet and Löwy, 2020, pp. 528–529). As evidenced by his glowing approval rating in a March 2020 opinion poll (Forêt and Bénis, 2020), this combination of scientific credibility and a rebellious, outsider persona probably endeared him to the public. Besides his authoritative medical background lending credence to his claims, Raoult also epitomized the “caring physician” fighting to quickly bring a cure to those in need (Berlivet and Löwy, 2020, pp. 528–529)—and one who was resisting “the tyranny of the medical elite” (p. 527).

However, Raoult did not originate the idea of hydroxychloroquine as a COVID-19 cure. Between January to February 2020, limited data out of China already laid the groundwork for the use of hydroxychloroquine, including an in vitro study by Yao et al. (2020) and a multicenter expert consensus recommending chloroquine—hydroxychloroquine’s more toxic analogue—for all cases of COVID-19 (Multicenter Collaboration Group, 2020). A 2005 animal study demonstrating chloroquine’s ability to curb the cellular spread of SARS-CoV-1, which caused the 2002–2004 coronavirus outbreak, lent further, oblique proof of hydroxychloroquine’s curative potential for the present disease (Vincent et al., 2005).

Based on those data, Raoult began his own clinical trial. On YouTube at the end of February 2020, he cited the Chinese expert consensus in calling COVID-19 an easily treatable infection (IHU Méditerranée-Infection, 2020). After he announced that the IHU-Méditerranée Infection would test and treat anyone who came, people turned up in “winding, single-file lines, like pilgrims” (Sayare, 2020). On the eve of the national lockdown, Raoult reported the results of his trial via YouTube, claiming a “100 percent cure rate” for hydroxychloroquine against

Table 1
Summary of three cases.

	FRANCE	PHILIPPINES	MADAGASCAR
Panacea	Hydroxychloroquine	Ivermectin	Covid-Organics
Moment of extraordinary crisis	Start of COVID-19 pandemic	COVID-19 surge of March 2021	Start of COVID-19 pandemic
Pre-existing foundation	<ul style="list-style-type: none"> - treatment for diseases like malaria and lupus - early data from China supporting its use for COVID-19 	<ul style="list-style-type: none"> - human and animal anti-parasitic - limited, early studies supporting its use against COVID-19 - already a COVID-19 miracle cure in many countries for the past year 	<ul style="list-style-type: none"> - core substance (<i>Artemesia</i>) used for malaria treatment - rooted in traditional medicine - represented pro-African, anti-Western/colonial sentiments
Pioneering medical/heterodox authority	Dr. Didier Raoult (representing IHU-Méditerranée Infection)	"Concerned Doctors and Citizens of the Philippines"; physicians like Dr. Benigno Agbayani and Dr. Allan Landrito	- President Rajoelina - Malagasy Institute of Applied Research
Accessible quality	<ul style="list-style-type: none"> - cheaply sold in pharmacies - available for free in Raoult's hospital 	<ul style="list-style-type: none"> - cheaply sold in pharmacies (Initially for veterinary and later for human use) - distributed for free by politicians 	<ul style="list-style-type: none"> - cheaply sold in supermarkets - distributed house-to-house for free by the military
Consequential outcome	<ul style="list-style-type: none"> - influenced use in countries like USA and Brazil - disproven by newer trial data and subsequently banned in the country 	<ul style="list-style-type: none"> - Philippine FDA allowed compassionate use. - still popular, despite lack of evidence 	<ul style="list-style-type: none"> - influenced use in other African countries - production of new variant with support from WHO

COVID-19 (Sayare, 2020). The study, published four days later in a peer-reviewed journal (Gautret et al., 2020), has since been questioned for its lack of scientific rigor, including by the very medical society that expedited its release (Berlivet and Löwy, 2020).

At the time of publication, however, Raoult's findings swiftly gained traction across French society, including in supportive pockets of the medical community (Trouillard, 2020). Doctors started prescribing hydroxychloroquine, as shown by the staggering spike in prescriptions received by pharmacies nationwide, sparking fears of a shortage for patients who used the drug chronically (e.g. lupus patients) (Ducamp, 2020). Critics of the administration from the opposition and far-right emerged in support of hydroxychloroquine, including presidential candidates Marine Le Pen and Jean-Luc Mélenchon (Chazel, 2020). One senator urged the government to disregard the opinion of "academic circles" and start using hydroxychloroquine widely, while the mayor of Nice exhorted the public on radio to keep trusting Raoult (Le Figaro with AFP, 2020). Amplifying Raoult's global reach, a former minister of health started an online petition that garnered over 460,000 signatures in support of the drug (Sciama, 2020). By the end of March, the highest health authorities had officially decreed the use of hydroxychloroquine for COVID-19 (Haut Conseil de la Santé Publique, 2020). Macron himself personally visited Raoult in Marseilles—"a clear sign of [the latter's] newfound political clout" (Sciama, 2020)—and even called for clinical trials for the drug (Willsher, 2020).

The decline of hydroxychloroquine has been well documented: In May 2020, the World Health Organization (WHO) paused a global trial on the basis of a since-retracted article from *The Lancet* showing increased cardiotoxicity with hydroxychloroquine use in COVID-19 patients; the French government immediately followed suit and disallowed hospitals from prescribing the drug (Chappell, 2020). (Later studies did establish the drug's lack of benefit against the disease [RECOVERY, 2020].) Nevertheless, the case of France demonstrates how the state yielded to immense pressure from individual politicians, scientists, and the general public to sanction (temporarily) the use of a wonder drug. Backed by credible heterodox authority—one who was also a crowd-favorite political figure—that wonder drug became a sought-after commodity amid the beginnings of an extraordinary crisis. And as earlier commentators noted (Berlivet and Löwy, 2020), the cheapness and wide availability of hydroxychloroquine could have only fueled its appeal.

4.2. Ivermectin in the Philippines

Ivermectin, a common human and veterinary anti-parasitic, entered the COVID-19 discourse around the same time as hydroxychloroquine, through an Australian in vitro study published in April 2020 that

demonstrated its inhibitory effects against SARS-CoV-2, the pandemic's causative agent (Caly et al., 2020). As Turkia (2021) catalogued, the drug soon found its way to treatment protocols and public conversation across Europe, Asia, and the Americas.

By March 2021, the global hype over the drug had reached a point where both the WHO (2021a) and European Medicines Agency (2021) already had to publicly advise against using it for COVID-19. That same month, however, the Philippines experienced a critical upsurge in cases, with single-day tallies exceeding the 10,000 mark for the first time, forcing the government to re-impose the strictest form of lockdown in the capital region of Metro Manila (Magsambol, 2021a). Amid the country's worst surge thus far, health facilities operated well beyond capacity and ran out of resources rapidly (Tomacruz, 2021); turned away by successive hospitals, patients and their families sought help through their social media feeds, which now resembled literal 'obituary walls' (Tomacruz and Magsambol, 2021). This unprecedented doomsday scenario, coupled with a sluggish vaccination campaign that had started only earlier that month, contextualizes the desperate atmosphere that prompted many Filipinos to search for alternative means of protection—and which led them specifically to ivermectin (Hofileña, 2021).

The push for ivermectin that emerged during this time originated not from a single individual, but from different voices in the medical sector, best exemplified by the physician's alliance Concerned Doctors and Citizens of the Philippines. Its founder, Dr. Allan Landrito—described by media outlets as the drug's most vocal proponent—even started self-importing and compounding the drug, and had sold the unregulated concoction to some 8000 patients by the end of March (Talabong, 2021). Summoned to a congressional hearing, Landrito defended his actions by saying that "my patients are begging me to treat them" and "if [government wants] to put me behind bars ... it doesn't matter" (Talabong, 2021). Separately, the alliance's president, Dr. Benigno Agbayani, stated that ivermectin was only "[filling] a 'void'" created by the slow vaccination rollout (Yamsuan, 2021). This implicit justification in support of ivermectin—that, given the worsening pandemic, it is prudent to use the drug *in case* it works, rather than not use it while waiting for evidence from lengthy clinical trials—was echoed by a physician-columnist in the *Philippine Daily Inquirer*, the country's paper of record (Castillo, 2020).

The pushback from medical institutions and regulatory agencies was only expected: First, the Philippine Food and Drug Administration (FDA), then the WHO through its country representative, then eventually, the national expert group behind the country's official COVID-19 clinical practice guidelines (CPG), all cautioned against using the drug for the disease in the absence of official trial results (Magsambol, 2021b, 2021d, 2021d). But this collective stand was shaky and inconsistent, and ultimately failed to deter pro-ivermectin authorities and ordinary

citizens alike from clamoring for and consuming the drug.

For one, despite this call to wait for trial-generated evidence, and even as the Department of Health (DOH) warned against the legal repercussions of distributing and promoting ivermectin without a permit (Magsambol, 2021c), the FDA somehow went ahead and approved the unregulated use of the drug to one hospital on the basis of ‘compassionate use’ (Cabico, 2021), and by May, had granted the same permission to five more hospitals (Galvez, 2021)—creating the perception that the regulatory body had caved to mounting popular and political pressure (Mercado, 2021a). In late April, two congressmen personally distributed the drug to their constituents for free, with one of them saying they could no longer adhere to the “inflexible bureaucracy” of research trials and regulatory approval (Mercado, 2021b). On this issue, the Justice Department took a similarly non-committal stance and literally left the decision to sanction the congressmen to police officers (who, thus far, have predictably chosen not to do so) (Buan, 2021). And while not outright endorsing the drug himself, President Rodrigo Duterte ordered regulators to facilitate local clinical trials for ivermectin, in an equivalent show of ambivalence (Deiparine, 2021). These incidences of inaction and inconsistency from the country’s highest authorities can be considered instrumental in emboldening pro-ivermectin factions to continue championing the drug openly, to the point that when the expert group behind the Philippine COVID-19 CPG declared the drug as officially “lacking sufficient evidence” for efficacy, certain lawmakers even questioned this expert consensus in a congressional hearing (Magsambol, 2021d).

So far, the global evidence on ivermectin’s benefits for COVID-19 remains lacking; what was widely considered the most reliable study supporting its use has been retracted over ethical concerns (Davey, 2021). But in the Philippines, where the drug retails at just over PHP 20 (USD 0.5) apiece (Araja, 2021), the authorities have continued sending out mixed messages: Just two weeks apart in July 2021, the DOH virtually declared ivermectin to be ineffective against COVID-19 (Gonzales, 2021), while the Department of Science and Technology announced a clinical trial budgeted at PHP 22 million (USD 437,700) to begin in August (Luci-Atienza, 2021). As the case of the Philippines demonstrates, state and authority figures, in their seeming reluctance to stand firmly against an unproven wonder drug, can enable the pharmaceutical messianism of their political peers to flourish.

4.3. Covid-Organics in Madagascar

Unlike hydroxychloroquine and ivermectin, Covid-Organics was created specifically to ‘cure’ COVID-19. Like the former, its inciting moment of extraordinary crisis was the start of the pandemic. In April 2020, a month after Madagascar went into preliminary lockdown, President Andry Rajoelina announced the creation of the ‘first African cure’ for the virus. Claiming that this herbal tea, partly derived from a species of *Artemesia*, could “give results in seven days” (Baker, 2020), Rajoelina set about distributing the decoction not only throughout his country, but also to numerous other African nations that indicated their interest (Atabong, 2020).

The cure expectedly met resistance from orthodox scientific circles, including the country’s National Academy of Medicine and the WHO (Nordling, 2020; Vaughan, 2020). But in Madagascar’s communities, where supermarkets sold the cure at the equivalent of USD 1.50 for 10 tea bags (Baker, 2020), and where the military was even deployed to dispense the cure house-to-house for free (AFP, 2020), ordinary people largely embraced it and even “thronged” public distributions (Shaban, 2020). What might account for the cure’s popularity?

For one, Covid-Organics was created by a well-respected national institution—the Malagasy Institute of Applied Research, which has “catalogued thousands of medicinal herbs used by Madagascar’s traditional healers” for the last half-century, and whose work has contributed to breakthroughs in diabetes and cancer management; according to the Institute director, the fact that the key ingredient (*Artemesia annua*) had

already demonstrated therapeutic potential against SARS-CoV-1 greatly informed the impetus to formulate the new cure (Baker, 2020; see Li et al., 2005). Thus, as a “remedy [derived] from the local traditional pharmacopeia” (Fofana, 2020), Covid-Organics already bore the seal of institutional credibility.

On a broader level, the cure tapped into the deep-seated cultural regard for traditional and herbal medicine. As one commentator noted, in a country where many communities still have limited access to conventional, biomedical healthcare, “traditional medicine is how we roll” (Baker, 2020). People embraced the cure in part because it was marketed as a “tea,” a familiar, plant-based—and therefore safe and reliable—substance (Ngam, 2020).

Most significantly, however, Covid-Organics resonated with local notions of pride and continental pan-Africanism: As the first so-called African COVID-19 cure, it became not only emblematic of indigenous tradition, but also symbolic of the “revalorisation of African culture [and] a reversal of centuries of [Western] denigration, marginalisation, and erasure” (Fofana, 2020). To echo Ngam (2020, p. 6), the cure’s “growing popularity outside Madagascar [probably had] nothing to do with the product’s medicinal value”; it was embraced largely because it became “a source of pride”—“Africa’s contribution to the treatments being developed around the world.” This can explain the flurry of congratulations from numerous African leaders (and the orders placed by their respective countries) after Rajoelina announced the cure’s creation, even as academic quarters raised their doubts. Writing specifically about the Tanzanian experience, Richey et al. (2021) framed this ‘unscientific’, multi-country acceptance of Covid-Organics as a continuation of ‘South-South humanitarianism’: The cure, in this case, was but part of the ongoing narrative of ‘marginalized’ and ‘neglected’ Global South countries ostensibly turning to each other for help amid continuing colonialism from the Global North, which had historically exploited and oppressed the African people. All these pan-African sentiments that emerged in this “climate of deep distrust of Western medical science” (Nordling, 2020) were then magnified and reinforced by local media, which also helped fuel resentment against the cure’s critics (e.g. WHO) by repeating—and solidifying—the stand of its advocates, no matter how unfounded (e.g. Rajoelina dismissing the associated censure as “conspiracy” to “denigrate Africa as a continent ... unable to find its own cure”) (Atabong, 2020, p. 4).

To date, there is no conclusive evidence of Covid-Organics’ efficacy against COVID-19 (see Nie et al., 2021). Yet, the cure has endured in Madagascar, to the extent that a new variation has been approved for the market one year after the original (Mandimbisoa, 2021). The clamor for it was also so intense, its critics had to back down and become more amenable to exploring its therapeutic potential through clinical trials. For instance, the WHO even provided “technical support” for the trial on the new variant, dubbed CVO+ (WHO, 2021b); while at one point, the African Union (2020) entertained a similar collaboration with the country. Even with the advent of vaccinations in 2021, Rajoelina has kept pushing for his miracle cure: During the first quarter of the year, amid a deadly second wave of infections, the president went on record to say that the vaccines “had too many side effects” and that he would still trust in Covid-Organics (Verneau, 2021).

Though also driven by heterodox authority (i.e. Rajoelina), the popularity of Covid-Organics was informed mainly by preexisting cultural notions of a ‘trustworthy’ cure, despite the cure’s novel and unproven nature. As such, it belongs to the continuum of miracle cures that have sprouted in Africa since the early years of HIV/AIDS. In this example, we glimpse how, synergistically, the lingering wounds of colonialism, prevailing trust in local medical traditions, and distrust in Western biomedicine can allow a wonder drug to thrive in the modern public consciousness.

5. Final reflections

Our article demonstrates three cases of pharmaceutical messianism,

each showing the medical-populist nature of this phenomenon. In the absence of definitive cures during critical junctures of the COVID-19 pandemic, hydroxychloroquine, ivermectin, and Covid-Organics—substances backed by heterodox authority and rooted in existing scientific or traditional knowledge—filled the void, becoming miracle cures in their respective countries. This concluding section outlines three points of reflection and maps out the future research agenda.

First, it is important to acknowledge the transnational character of pharmaceutical messianism. Our examples show a pattern of miracle cures transcending country boundaries bidirectionally (i.e. countries either adopting a cure already in use elsewhere or influencing other countries to adopt the same). Raoult pushed for hydroxychloroquine based on new data from China, but the drug's popularity in France also bolstered its subsequent use in countries like the United States and Brazil (Casarões and Magalhães, 2021). Ivermectin in the Philippines was clearly legitimized from the outside-in, the drug already a COVID-19 'cure' in many countries by then, while the opposite held true for Covid-Organics, which was quickly embraced by Madagascar's African neighbors. One possibility of preventing this phenomenon from thriving, then, is for state and health authorities to look at what has taken root elsewhere—at the miracle cures already being touted abroad, or even just within isolated pockets of the country—and to orient anticipatory communication efforts accordingly. This is undoubtedly a limited measure: Among other considerations, it assumes remarkable foresight and the benefit of time on the part of those responsible for making preventive decisions, as well as a sympathetic political establishment. This also means that, given the ideal circumstances, this kind of straightforward, assertive, evidence-based health communication (Freckelton, 2020) may prove the most effective anticipatory tool against pharmaceutical messianism, whether as grassroots campaigns or even social-media information drives.

Second, all three examples highlight the need to safeguard the independence of regulatory agencies that are almost always on the receiving end of the politicization of pharmaceuticals—and whose decisions can lead to the erosion of public trust in scientific institutions. As a medical-populist phenomenon, pharmaceutical messianism has the possibility to wane, but its effects on health communication and policy can be lasting, especially as it thrives partly on the mobilization of alt-science networks in the digital sphere (Casarões and Magalhães, 2021). In diverting public trust to a miracle cure, for instance, it may well engender mistrust on public health-sanctioned interventions like vaccines (Bertin et al., 2020). While vaccine hesitancy has been implicated in people's decisions to pursue alternatives, the converse can also be true—the existence of such alternatives triggering vaccine hesitancy. As shown by the case of ivermectin in the Philippines, as well as the ongoing HIV pandemic in Africa (Amon, 2008), the lack of equitable access to vaccines and antiretrovirals can encourage people to embrace unproven but far more accessible alternatives.

Finally, what determines a miracle cure's staying power—or its diminution to irrelevance? As our examples demonstrate, scientific evidence is one influence. Hydroxychloroquine lost traction precisely because trial-generated data refuted its use early in the pandemic's course (RECOVERY, 2020). At the same time, however, empirical evidence can be insufficient in the face of more compelling factors: Even without corroborating data, and even with strong pushback from public health institutions, demand for ivermectin has endured in the Philippines, likely because of the country's protracted COVID-19 surge. Moreover, the relative "ease of claiming and exercising expertise" in this digital age of populist resurgence (Brubaker, 2020, p. 5) can lead to public confusion on which practices are truly supported by scientific evidence and consensus. Thus, further exploration of how 'expertise' is mediated in online and offline spaces; how it informs 'infodemics' of fake news and how these can be addressed, is imperative (see Rodrigues and Xu, 2020; Van der Linden et al., 2020). In this vein, future researches, hopefully including ethnographic studies, should also explore other settings where the touted cures we surveyed, as well as other such

substances, likewise figured in populist performances and popular practices. The recurrent and inevitable nature of pharmaceutical messianism signals an as-yet unfulfilled challenge to recognize its logics, understand its contexts, and, in doing so, contribute to mitigating its consequences.

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