

ORIGINAL ARTICLE

Fake news and misinformation in Brazil: critical analyses regarding scientific information in pandemic times

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Abstract

Introduction: fake news is one of the most frequently discussed subjects in the media, a problem that has become more evident with the rise of social and digital networks assuming the role of main information disseminators. From this perspective, it is important to be connected to a simple, fast communication vehicle that reaches many people. Media may also damage quality of scientific health communication with a negative impact on citizens' lives.

Objective: in this context, this article aims to reflect on fake news and the coronavirus disease (COVID-19) pandemic, which has devastated the world since the beginning of 2020, particularly in Brazil.

Methods: countless actions have been taken to contain what the World Health Organization (WHO) calls an "infodemic" that is present in everyday life, invading houses, mobile phones, and computers, in a time of social isolation and working from home. In this scenario, it is up to journalists, communicators, scientists, and health professionals jointly to share important information and to communicate about health and science in a responsible way.

Conclusion: in a crisis it becomes essential that information reaches a large number of people and community leaders in order to influence people positively, which might help to save lives.

Keywords: fake news, disinformation, public health, pandemic, journalism, scientific journalism

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Authors summary

Why was this study done?

This article was done to reflect on fake news and the coronavirus disease (COVID-19) pandemic, which has devastated the world since the beginning of 2020, particularly in Brazil. Scientific divulgation must consider how to deal with misinformation.

What did the researchers do and find?

We live in an era in which access to digital communication occurs every second; therefore, if the tendency toward fake news becomes even more evident, how can we deal with that situation? Among the important factors that we need to deal with, we face a tug-of-war: propagation of fake news about the pandemic, its gravity or not, the necessity of social isolation, homemade recipes for cures, and the premeditated disease origin. What has already been denied seems far more incoherent, in a style that verges on a conspiracy theory. We realize that those kinds of comments, news, and beliefs are not far from us, since friends, relatives, and neighbors send us the “news” by digital media, which seems more like traps that will put us in a world that is outside reality; but maybe, for many, it is easier to believe.

What do these findings mean?

In a crisis it becomes essential that information reaches a large number of people and community leaders in order to influence people positively, which might help to save lives. Press and journalism play an important role in the process of alerting the public about the consequences of lies and fake news, as they can persuade in a positive way, providing reliable content that surpasses lies.

Highlights

Scientific divulgation must consider how to deal with misinformation. We live in an era in which access to digital communication occurs every second; therefore, if the tendency toward fake news becomes even more evident, how can we deal with that situation? If the majority of the population informs itself by social media, it would be appropriate to develop campaigns in those networks, if the path is through traditional press – television, radio, magazines, or online journals – let it be so. Press and journalism play an important role in the process of alerting the public about the consequences of lies and fake news, as they can persuade in a positive way, providing reliable content that surpasses lies.

INTRODUCTION

Background: Where Is The Fake News?

It only takes access to the Internet, journals, magazines, press, and, mostly, social networks to realize that one of the biggest enemies of society, nowadays, is fake news. Fake news not always means antithesis of the truth, but may be a biased way of taking advantage of transmitting an issue in order to harm institutions or actors with ideologically opposing views¹. Fake news spreads at high speed and is capable of provoking disagreements and causing harm in people’s lives, especially during a pandemic as we are living in now. The World Health Organization (WHO) declared COVID-19 a pandemic in March this year, after identifying COVID-19 as an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that was spreading to many countries. This fact implied strategic changes to the management of COVID-19 all over the world² and a change in facing the virus, with the focus on implement measures for social distancing and isolation. Measures to mitigate the impact included, closing schools, commerce, and services worldwide, avoiding unnecessary movement of people in streets, as well as the use of protection equipment to avoid health systems overload².

At this moment, there are more than 766,440,796 COVID-19 cases worldwide, according to the Johns Hopkins platform, with about 6,932,591 deaths (data by 23/05/2023) since the emergence has started³. Even with these high numbers, misinformation passes through the social networks, enters houses by mobile phone, computer, or even informal “word of mouth” communication. Misinformation is defined by Tandoc Jr and Lim and Ling⁴ as one of the six kinds of false information, the so-called made information where texts do not have a factual or real basis, and are published in a

news style with a clear intention to misinform. According to the authors, the information is generally shared by non-news organizations or by people with some credibility, the facts are often harder to verified, and a phenomenon that is more likely to show up in times of social vulnerability and stress, as in a pandemic.

It is in this crisis, that frightening and challenging scenarios in different countries are used by fake news to undermine all the serious and grounded work in public health and prevention actions developed by national authorities, the WHO, non-governmental institutions, and some private companies, by the velocity with which the false information is disseminated in social media. Tandoc Jr., Lim and Ling⁴ show that if received information comes from a known person, the veracity is higher, and it is often difficult to check. People prefer information that acknowledges their beliefs and tend to accept pleasant information, especially when they come from dear ones⁵.

Furthermore, political disputes stand out, many as a result of denials of published scientific evidence, even if it comes from international organizations with scientific approaches, such as the WHO and universities such as the Imperial College of London or Johns Hopkins. Those disputes and political crises in Brazil require space in the press, time and energy to read up on the controversies, and distances the population from vital news in an epidemic context. Political crises, unnecessary ethical conflicts, and disputes compete for space with indispensable information about the pandemic space that could be used to deepen discussions on COVID-19 and its human, psychological, and sociological aspects. In this context, the use of misinformation networks as a tool for mobilizing audiences and demoralize other groups expose even more toxic behavior¹.

Faced with this scenario, scientific divulgation must consider how to deal with misinformation⁶. We live in an era in which access to digital communication occurs every second; therefore, if the tendency toward fake news becomes even more evident, how can we deal with that situation?

A huge problem in false communication: the “infodemic”

Among the important factors that we need to deal with, we face a tug-of-war: propagation of fake news about the pandemic, its gravity or not, the necessity of social isolation, homemade recipes for cures, and China’s premeditated disease origin. What has already been denied seems far more incoherent, in a style that verges on a conspiracy theory. We realize that those kinds of comments, news, and beliefs are not far from us, since friends, relatives, and neighbors send us the “news” by digital media, which seems more like traps that will put us in a world that is outside reality; but maybe, for many, it is easier to believe.

The practice of creating false information and the avalanche of “news” was defined by the WHO as an “infodemic”⁷. This means that, beyond the pandemic, society is facing a second challenge, as if the great quantity of infected people all over the world, deaths, daily transformation, and the importance of maintaining physical and mental health, were not enough. In an attempt to contain the fast propagation of fake news, a partnership was formed between the WHO and social media enterprises, such as Facebook, Google, Pinterest, Tencent, Twitter, and YouTube. The Brazilian press also adheres to the movement and created specific channels to identify and correct pandemic information. When accessing these channels, it is possible to find highlights and space reserved for trustworthy information about COVID-19, which is normally bookmarked on the top of electronic pages.

Since the first month of COVID-19’s appearance in December last year in the province of Wuhan in China, a global movement against misinformation has accompanied the evolution of the pandemic and health crisis⁸. Examples of cases shown in the media and contradicted as false have occupied space in local, regional, national, and international press. The intention is to qualify information brought to the public as well as make it a factor of behavior change and acceptance of containment measures, fighting actions of anti-social isolation that contradict health authorities and governmental recommendations as preventive measures against virus dissemination.

Fake news and misinformation in Brazil

We can exemplify some cases of non-recommended conduct shown by the media, aroused in the pandemic. One, reported in March 2021, refers to protests in Brasília, Brazil’s capital, with the participation of the country’s state chief by political arguing against quarantine and social isolation⁹. In that moment, all participants broke the social isolation recommended by the Brazilian Ministry of Health and the WHO. Protesters did not wear masks or any other type of protective equipment. Their

attitudes and behavior were condemned or viewed as inappropriate, and included: gathering in large crowds, taking face-to-face pictures, speaking in close proximity to others, and disrespecting the recommended minimum distance¹⁰. Unfortunately, these protests are supported by the president and their team, who ignores basic scientific recommendations, and continues to represent the greatest threat to Brazil’s response to COVID-19¹¹.

Refusal of science has been a frequent action of the federal government, associated with fake news, in the response to the COVID-19 pandemic¹¹. At the beginning of April, in various Brazilian states, motorcades demanding to return to the workplace and protesting against social isolation took to the streets. An example was one of the protests that blocked a major Brazilian city’s (São Paulo) main avenue to ask for commerce reopening and emphasize political polarity.

These processes of misinformation from part of our governmental representants make the work of scientists and scientific communication very tricky and challenger. The president has several times questioned the efficacy of COVID-19 vaccines, support unproven therapies^{10,12}, and promoted pseudoscience, he had not available to be vaccinated, and also dis a public announce that he will be the last Brazilian to receive the vaccine. As far as we know, based on the age group, he could have done it for more than 3 months. Moreover, it is important to point out that actions like those have been frequently distributed in social media, reaching a large number of people that politically support them.

Other important references, specifically about fake news, were reported in media vehicles such as BBC News. The so called “Bat Soup” and conspiracy theory were also considered and disseminated as fake news in the beginning of COVID-19 outbreaks, with videos being rapidly shared in social media. According to this, a series of videos would supposedly show Chinese individuals eating bats while the virus was being spread all over Wuhan. Internet users started to point out that Chinese eating habits were to be blamed for the spreading of the disease (BBC, 2020). In the same report, fake news about supposed documents that prove COVID-19 was created in a Chinese laboratory for the purpose of generating an economic crisis in Europe and America, were posted on Twitter and Facebook. Recent quantitative study which evaluated more than 150 news in Brazil, concluded that WhatsApp is the primary channel for sharing fake news, followed by Instagram and Facebook¹³.

Unfortunately, in Brazil we have a history of events from fake news¹⁰. Nowadays, the combination of political polarization, increasing use of social media, and low scientific knowledge from the population offers a fertile ground for fake news¹⁴. Recent study investigated impacts of the circulation of misinformation videos on YouTube and concluded that fake news had undermine public debate about environmental catastrophes in favor of private interests¹. As mention by notaries and well recognised Brazilian scientists, in an article published on Nature Medicine journal, “without ignoring the past, it is now time to look ahead. Brazil needs to leave behind scientific ‘negationism’”¹¹.

Although the situation in Brazil should be considered unique and a regrettable exception, the situation in Latin American is not much better. Recent study¹⁵ has conducted a descriptive ecological research exploring the population that is unable to recognize fake news, who trust social network content, and the who use it as their sole news source in Argentina, Brazil, Chile, Colombia, Mexico, and Peru. Results showed a low capacity to recognize false news was evidenced in more than half of the population in the six countries evaluated. Likewise, it was observed that the countries with greater confidence in the content of social networks had, in general, high mortality rates, although this does not indicate that there is a cause-effect relationship between both phenomena¹⁵. Moreover, other recent study indicates that social media use is positively associated with the COVID-19-related misinformation beliefs¹⁶.

There are countless sources of free credible information on the internet. Among them: a platform on COVID-19 cases and deaths created by the renowned American university Johns Hopkins; press vehicles with worldwide open access to news about the pandemic; highly credible journals such as The New York Times, Le Monde, El País, The Guardian; TV and radio channels like BBC, CNN, information originated from ministries and health organizations in some countries, and the WHO. In addition, there are the efforts of various public and private education institutions, to create special electronic pages intended to spread general and specific information about COVID-19 situations, WhatsApp channels – such as the one of the Federal Ministry of Health – to provide information quickly and to solve doubts of fake news¹⁷. It is urgent the necessity of put efforts on establish a national public policy to provide a unified, reliable, and agile information system, both for health and communication professionals as well as for the full population¹⁸.

In Brazil, public educational institutions are committed to fighting the disease. For example, the 38 Education, Science and Technology Federal Institutes, which gather more than 1 million students from high school to higher education students, provide scientific information to the general public into their electronic pages, for free. Brazilian Universities also joined the mass communication campaign on public health. These are examples, among many others, that show that there are many channels, journalistic, and scientific, that make information freely accessible and available in different languages and from different institutions with credibility so that the population can read about the pandemic in its diverse forms. Even so, we witness fake news and terrifying video sharing, that, in minutes, gain thousands of “likes” and comments, and are quickly re-shared.

Misinformation: trigger factors

Trigger factors for misinformation vary. Health and science themes are more vulnerable than ever to pseudoscience that generates controversies and lacks credibility as never seen before. This is why people are easily manipulated. However, social networks such as Google, Facebook, and Twitter, have also shown that at the same time they can be important tools for the sake

of public health, highlighting contents about COVID-19 in order to assume an active function¹⁹. Scientists and institutions, jointly with the press, are learning to deal with such situations without having consolidated measures to combat them. Over them is placed a bigger responsibility: to deny false information, generate fact-checking channels, and spending time instead of focusing on important discussions, for example, how it is going to be from now on, how to plan worldwide¹⁶.

Some non-governmental organizations also work in favor of information literacy, with projects to combat misinformation, such as the News Literacy Project (2020), which acts to inform and train teachers in disciplines and contents to help students from kindergarten to high school to recognize fake news. The project created a free quiz, so anyone can learn how to detect if a news, text, or video is true or false. A non-governmental organization, Avaaz, also developed a research on how Facebook has behaved in the face of misinformation and the “infodemic” The research analyzed more than 100 posts with false information in six distinct idioms, shared more than 1.7 million times on social networks and viewed approximately 117 million times. The study found that even if the enterprise compromised itself by allowing fake news alerts and removing wrong information, there are significant delays in the implementation of those measures and anti-information politics, which means millions of users view and share harmful content about the pandemic. This Facebook process of excluding or saying information is incorrect can take up to 22 days, which is sufficient time for the erroneous posts to become viral.

Delays in information retraction are highly harmful. Walter and Tukachinsky²⁰ report on the minimization of misinformation effects if immediate correction is taken using mental model theories, in which replaced erroneous misinformation are more likely to be integrated into an individual mental model, playing down the original misinformation effects. It then creates a favorable environment for a new mental model, now with the correct information.

Another important point is that people must learn to select information sources. How is their capacity to do so? An example, although demonstrating some flaws, is high education students from public institutions that do not know, for instance, big Brazilian press journals, such as Folha de São Paulo and O Estado de São Paulo, are printed and distributed on a daily basis²¹. In the past, the majority of the population heard the same radio station or read the same newspaper; today, there are thousands of media channels sharing trustworthy information. However, quantity is not equal to quality or guarantees an audience. The selection must be understood in its broader context, which requires an analysis of the social context that influences individual decision-making processes. Besides, journalists’ actions also need to be based on responsibility, not only as for information publication, but also to support education and change in health social behavior²².

Is an information veracity check really done before sharing? A study conducted by the Brazilian Federal Senate²³ showed that 79% of Brazilians use WhatsApp

as the main vehicle to obtain information, followed by television (50%), and YouTube (49%), with printed journals and radio accounting for only 30%. When asked if they checked information before sharing the news, 82% answered that they had previously checked veracity, but 24% said it is more important to know who sent the news, so they get confident if it is a true one, than get to know primarily information source. This percentage can cause huge damage when we think of health misinformation.

In practice, if we have 100 people reading a news item, 24 care more about the emitter than the source itself, so they do not always check the facts. If those 24 shares to five others (quantity allowed for simultaneous sharing in WhatsApp via a desktop application), it will probably reach more than 120 people in a medium range of 10 seconds. That is, in one minute, information is sent to a minimum of 720 recipients, accounted for individual messages only, excluding group messages. By that logic, in about five minutes, if each recipient shares with five more individuals, a total of 3,600 people will receive the message. The velocity is frightening.

Research done in 27 countries, one of the most reliable within media research, showed that in the last five years, the credibility of press vehicles has fallen in most countries²⁴. They highlight two main factors: prevalence of fake news and doubts about the purpose of what is shared. Moreover, proximity between people is important, as they rely more on who they know personally. This makes us think about the necessity of rearranging strategies, creating public listening mechanisms before creating health propagation actions, even in smaller groups, as we are not able to reach everyone at once.

Other factors may contribute to minimize the space fake news gets regarding health information and the pandemic itself: a proposal would be to unite scientists with every other class – physicians, research, teacher, and journalists – in an embracing scientific social network that produces content on health matters. Evaluations that display where patients seek information, which channels they use the most, how they would like to get access to or read about health news. In addition, the type of matter that interests people the most, by life history than data itself, numbers, or as appealing graphics as they are not understandable by majority²⁵.

Each type of communication has a specific function, a certain public for which it is intended, adequate molds, and formats for its objectives. The same thing cannot be said to a fellow researcher, who has post-doctorate, an extensive knowledge and access to information; or to all the poor populations that live around the globe, counting, in Brazil, about 13.5 million individuals living under the poverty line²⁶. While some have home offices, equipment, and the internet, others have access difficulties. Even if they are people with distinct perspectives, objectives, and interests, information and knowledge must be close to them.

It is important that the rate at which COVID-19 infections increases begins to decline so that health services can be adequately prepared for every new patient. In order for this to happen, it is important to involve the whole population by sharing information and knowledge,

allowing them to become agents for communication. To create a reliable content network based on scientific knowledge, technical personnel need to be trained to point out problems and solutions arising from the pandemic, and to try to establish a different culture for personal care. In this way, a significant increase in quality information and a population searching for knowledge can be expected. It is also indispensable to have access to credible sources, assignments due to scientific promoters, journalists, and stimulating education to combat misinformation. In addition, initiatives that stimulate more individuals to become assiduous readers of contents with “science” as an essential source.

How can misinformation be corrected?

Finally, we believe that only science-based information can contribute to saving more lives and arousing interest in science, especially in the health field, in which the population can benefit in a more immediate way. Therefore, press and journalism play an important role in the process of alerting the public about the consequences of lies and fake news, as they can persuade in a positive way, providing reliable content that surpasses lies¹⁷. Clear and concise evidence-based communication to society is essential²⁷.

Other factors influence more efficacious messages, according to Walter and Tukachinsky²⁰, such as the credibility of the source correcting the data, identifying the author of the misinformation as the main source for retraction; if the correction is linked to the receiver’s personal understanding, a reversal of the original mental model is more likely to occur. Contextualization and explanation play key roles in corrective processes because messages need to be denied as well as explained consistently, argumentatively, and emphatically to show what is behind the false information, and what interests have been triggered to allow the false information to be shared²⁰.

In the same line, and in order to complement the importance of media in the process of spreading correct and ethic information, which collaborates in controlling the COVID-19 pandemic, a recent study indicated a strong connection between average daily media publications and the number of infected cases in the beginning of the outbreak, by analyzing seven popular communication vehicles⁸. The higher the number of scientific items published by the media, the higher the low rate in the disease flatness curve at the beginning of the outbreak and in a specific period analyzed.

Media has a role in improving awareness about the disease and in stimulating quarantine acceptance⁸. Public education by media concerns the use facial masks, maintaining social distancing, and frequently washing hands in order to reduce chances of infection. That divulgation effectively influenced disease transmission patterns in the study area. Fellow researchers clarified the effects of media on the induction rate of quarantine and lowering the flatness of the curve.

If the majority of the population informs itself by social media, it would be appropriate to develop campaigns in those networks, if the path is through traditional press –

television, radio, magazines, or online journals—let it be so. If trust relies on a friend or relative, actions must be taken so they get to these people in a more personalized manner, by community leaders, neighborhood associations, church representatives, and groups that effectively influence a broader number of people. The moment requires joint effort, participative management, dialogue, and involvement with the population. For example, an initiative would be the implementation of automatic fact-checking content by a coordinate response against infodemic²⁸.

Would it not be the moment to avail that public movement for free information availability as well as the population's interest in informing itself, to insert, slowly, a more strategic health communication? Why not to chart important themes and produce material, reports, and scientific products that can arouse interest in them?²⁹⁻³¹ Tell life stories that rebound in daily society themes, which show perspectives of the cured ones and what impact we may face up front. Yet, make dense analyses of the present and pathways to be tracked, not only by health professionals, governors, or journalists, but also by expanding sociological, psychological, and educational ones. Those are merely suggestions for reflecting upon different manners for us to communicate closely with people, from scientific literature³², generating more consistent debates and try, thus, to avoid “infodemic” described by the WHO.

Author Contributions

All authors contributed to the manuscript. Tássia

Galvão: Conducted the first draft, definition of the study design, discussion of results and final version of the text; Priscilla Noll: Participated in the general orientation of the research, definition of the study design, discussion of results and final version of the text; Erika Aparecida Silveira: Participated in the general orientation of the research, definition of the study design, discussion of results and final version of the text; Matias Noll: Participated in the general orientation of the research, definition of the study design, discussion of results and final version of the text.

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Conflicts of Interest

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Resumo

Introdução: *fake news* são um dos assuntos mais discutidos na mídia, problema que ficou mais evidente com a ascensão das redes sociais e digitais assumindo o papel de principais divulgadoras de informações. Nessa perspectiva, é importante estar conectado a um veículo de comunicação simples, rápido e que chegue a muitas pessoas. A mídia também pode prejudicar a qualidade da comunicação científica em saúde com impacto negativo na vida dos cidadãos.

Objetivo: nesse contexto, este artigo tem como objetivo refletir sobre *fake news* e a pandemia da doença do coronavírus (COVID-19), que assolou o mundo desde o início de 2020, principalmente no Brasil.

Método: inúmeras ações têm sido tomadas para conter o que a Organização Mundial da Saúde (OMS) chama de “infodemia” que está presente no dia a dia, invadindo casas, celulares e computadores, em tempos de isolamento social e trabalho em casa. Nesse cenário, cabe aos jornalistas, comunicadores, cientistas e profissionais da saúde, em conjunto, compartilhar informações importantes e comunicar sobre saúde e ciência de forma responsável.

Conclusão: numa crise torna-se essencial que a informação chegue a um grande número de pessoas e líderes comunitários de forma a influenciar positivamente as pessoas, o que pode ajudar a salvar vidas.

Palavras-chave: *fake news*, desinformação, saúde pública, pandemia, jornalismo, jornalismo científico.

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