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Health communication about COVID-19 and Diabetes Mellitus in social media: true and false

Comunicação em saúde sobre COVID-19 e Diabetes Mellitus em mídias sociais: verdadeiro e falso
Comunicación de salud sobre COVID-19 y Diabetes Mellitus en las redes sociales: verdadero y falso

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ABSTRACT

Objectives: To identify true and false issues related to COVID-19 and to people with diabetes mellitus in media channels. **Method:** A documentary research study carried out in posts on *Twitter* and on the websites of the Brazilian Society of Diabetes and Ministry of Health, submitted to thematic analysis and discussed in the light of the scientific evidence on the topic. **Results:** Of the 110 posts, 71 were from *Twitter*, 31 by the Ministry of Health and 8 by the Brazilian Society of Diabetes. Fake news corresponded to 88 posts; seven disclosed information about unfinished studies; six were wrong news items; and nine were true. The topics were grouped into food products and substances, living conditions (socioeconomic and habits), medications, COVID-19 and diabetes mellitus, severity and risk factors. There is an excess of disinformation with the purpose of deceiving and denying reality, given the disputes over political, economic and ideological knowledge and powers. **Conclusion and implications for the practice:** Most of the posts were fake news. As the social media are a place for the easy dissemination of true or false information, scientists and health professionals need to approach the virtual communities of these media and use them as allied tools for communication in health.

Keywords: Coronavirus; Diabetes *Mellitus*; Information Dissemination; Social Media; Health Communication.

RESUMO

Objetivos: Identificar em canais de veiculação midiática, os assuntos verdadeiros e falsos relacionados à COVID-19 e às pessoas com diabetes *mellitus*. **Método:** Pesquisa documental realizada em postagens no *Twitter* e nos *sites* da Sociedade Brasileira de Diabetes e do Ministério da Saúde e submetidas à análise temática e discutidas à luz das evidências científicas sobre o tema. **Resultados:** Das 110 postagens, 71 eram do *Twitter,* 31 do Ministério da Saúde e 8 da Sociedade Brasileira de Diabetes. As *fake news* correspondiam a 88 postagens; sete divulgavam informações sobre estudos não concluídos; seis eram notícias equivocadas; e nove verdadeiras. Os assuntos foram agrupados em alimentos e substâncias, condições de vida (socioeconômica e hábitos), medicações, COVID-19 e diabetes *mellitus*, gravidade e fatores de risco. Há excesso de desinformação com a finalidade de enganar e negar a realidade, dadas as disputas de saberes e poderes políticos, econômicos e ideológicos. **Conclusão e implicações para a prática:** A maior parte das postagens eram *fake news*. Em sendo as mídias sociais um lugar para a fácil disseminação de informações verdadeiras ou falsas, os cientistas e profissionais de saúde precisam se aproximar das comunidades virtuais dessas mídias e usá-las como ferramentas aliadas da comunicação em saúde.

Palavras-chave: Coronavírus; Diabetes *Mellitus*; Disseminação de Informação; Mídias Sociais; Comunicação em Saúde.

RESUMEN

Objetivos: Identificar cuestiones verdaderas y falsas relacionadas con el COVID-19 y personas con diabetes mellitus en los canales de comunicación. **Método:** Investigación documental realizada en publicaciones en Twitter y en los sitios web de la Sociedad Brasileña de Diabetes y el Ministerio de Salud, sometida a análisis temático y discutida a la luz de la evidencia científica sobre el tema. **Resultados:** De las 110 publicaciones, 71 fueron de Twitter, 31 del Ministerio de Salud y 8 de la Sociedad Brasileña de Diabetes. Las noticias falsas correspondieron a 88 publicaciones; siete revelaron información sobre estudios inconclusos; seis fueron noticias equivocadas; y nueve verdaderas. Los temas se agruparon en alimentos y sustancias, condiciones de vida (socioeconómicas y de hábitos), medicamentos, COVID-19 y diabetes mellitus, gravedad y factores de riesgo. Existe un exceso de desinformación con el propósito de engañar y negar la realidad, dadas las disputas sobre conocimientos y poderes políticos, económicos e ideológicos. **Conclusión e implicaciones para la práctica:** La mayoría de las publicaciones eran noticias falsas. Dado que las redes sociales son un lugar para la fácil difusión de información verdadera o falsa, los científicos y los profesionales de la salud deben acercarse a las comunidades virtuales de estos medios y utilizarlos como herramientas aliadas para la comunicación en salud.

Palabras clave: Coronavirus; Diabetes *Mellitus*; Diseminación de la Información; Medios de Comunicación Social; Comunicación en Salud.

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INTRODUCTION

In late 2019, in the city of Wuhan, China, a new coronavirus was identified as the cause of the Severe Acute Respiratory Syndrome - Coronavirus 2, referred to as SARS-CoV-2. This virus is the agent responsible for causing the coronavirus disease, labeled COVID-19. Virus transmission occurs through contact with respiratory droplets, which can explain the high transmissibility of this etiological agent.[1] According to data from the World Health Organization (WHO), made available on November 12th, 2021, there were 251,788,329 confirmed cases of the disease and 5,077,907 deaths worldwide.[2] Up to that date, according to data made available by the Ministry of Health (*Ministério da Saúde*, MS), Brazil had recorded nearly 21,909,298 confirmed cases of the disease and 610,036 deaths.[3]

To the present day, it is known that the lethality of the disease can vary according to age group and to certain clinical conditions,[1] such as: advanced age, Chronic Obstructive Pulmonary Disease, asthma and oxygen dependence, serious heart problems, uncontrolled hypertension, diabetes *mellitus*, chromosomal diseases or immune fragility status, advanced chronic renal failure, high-risk pregnancy, severe obesity (Body Mass Index - BMI > 40) and liver diseases. These conditions worsen these people's health, which makes hospitalization in the Intensive Care Unit (ICU) and/or use of mechanical ventilation necessary.[4-6]

Among the hospitalized individuals in Brazil, there is a higher prevalence of people with comorbidities when compared to the general population. The prevalence of hospitalization in individuals with Severe Acute Respiratory Syndrome (SARS) and Diabetes *Mellitus* (DM) was 25% and it is estimated that 7.3% of the people who died had DM.[1]

The relationship between COVID-19 and DM is complex, and two aspects can be considered that explain worsening of the disease. The first consists of factors such as pro-inflammatory and hypercoagulable state, hyperglycemia, and comorbidities (arterial hypertension, cardiovascular disease, chronic kidney disease, and obesity). On the other hand, a severe COVID-19 infection and its steroid treatment can exert a negative impact on DM and, in turn, worsening of hyperglycemia can adversely affect the course of COVID-19.[7]

As a result of the advance and spread of COVID-19 around the world, circulation of information has increased, showing a space of dispute for the monopoly of the truth and that gains new contours in the digital context, as people inadvertently share the contents that dictate a certain world view in which they believe.[8] Many of these health communications can be incorrect,[9] referred to as fake news,[10,11] and generate negative impacts on collective health.

As a result of this amount of information, the WHO started to use the term "infodemic", referring to the excess of information, either accurate or not, that makes it difficult to search for reliable sources.[12,13] Thus, the WHO launched an information platform with the objective of disseminating correct messages. Such a measure evidences a global misinformation epidemic,[14] that is, false or inaccurate information whose deliberate intention is to mislead.[13] In the context of the COVID-19 pandemic, the infodemic makes it possible to spread disinformation, a phenomenon referred to by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as disinfodemic.[15]

In Brazil, aiming to combat fake news on health, the MS provided a *WhatsApp* telephone number for the population to send messages or photographs that they saw or received through the media, in order to ascertain whether the information is true or not. In addition to that, the MS has made a page available on its website with posts on news items evaluated for their veracity,[16] although many people, instead of using them as official communication channels, more often resort to the social networks as reliable sources.[17]

Faced with this context of propagation of the so-called *Fake News* and the knowledge gaps about COVID-19 and its relationship with DM, it becomes necessary to identify and combat them.[18] Thus, the objective of this was to identify true and false topics, in the media channels, related to COVID-19 and to people with diabetes *mellitus.* Therefore, the question is as follows: What news items are being broadcast about DM and COVID-19? Is the information contained in the news items based on sources published by competent bodies or through scientific evidence?

METHOD

A documentary and bibliographic research study that sought to evaluate primary-type documents, that is, not subjected to analytical or scientific treatments, such as: newspaper reports, films and photographs, among others.[19] The sources for data extraction came from public archives[20] in the following digital media: *Twitter,* Brazilian Society of Diabetes (*Sociedade Brasileira de Diabetes*, SBD) and Ministry of Health (*Ministério da Saúde*, MS). Choice of the *Twitter* platform was due to the fact that it is one of the largest digital platforms which allow sending texts and because it has connectivity with other platforms, such as *Facebook* and *Instagram*.[21] In turn, the choice of the SBD and MS websites is justified because they represent entities in the health area and in the theme under study (COVID-19 and DM) that are committed to fighting against disinformation.

In the first stage of the study, data collection was carried out in the chosen media from January to June 2021. In *Twitter*, data collection was performed using the "advanced search" function, which made it possible to select filters and keywords. The filters selected were as follows: anyone, location anywhere, including responses and original *tweets*, including *tweets* with links and, finally, the month of December 2019 and from January to March and from September to 2020 were selected. The words "coronavirus" and "diabetes" were typed in the "Keywords" fields.

In *Twitter*, it is important to highlight that the time frame was delimited by the extensive number of *tweets* found in the period

from December 2019 to December 2020, which would render conducting this research incompatible with the time and human resources available; thus, we chose the initial and final months over a year from the beginning of the pandemic.

To survey the information from the SBD, the *Google* website was used with the term "SBD and coronavirus" in the search field, and the fifth link of the page was used. The SBD page was titled "*SBD - Diabetes na era COVID-19*" ("SBD - Diabetes in the COVID-19 Era")[22] and, on top of the SBD website, the visitor sees some keywords with a direct link to the subject matter desired and, with two keyword being used in the current study. The first one, referred to as "*COVID-19 e Diabetes*" ("COVID-19 and Diabetes") directed to the page entitled Clarification note about COVID-19.[23] The second, referred to as "*Perguntas frequentes*" ("Frequently Asked Questions") led to the "*Perguntas frequentes: dúvidas frequentes sobre COVID-19 e diabetes*" ("Frequently Asked Questions: Frequent doubts about COVID-19 and diabetes").[24] These are environments with diverse information about the complications of COVID-19 in DM patients, with questions and answers.

For data collection of the MS information, the Google website was used and, in the search field, the phrase "ministry of health fact or fake" was included, using the first link from the search page that directs to the official MS page.[25] On this page, it is possible to use a filter field for content searches, such as: title, start date, end date and number of news items per tabs that will be viewed. In the title field, the word "coronavirus" was used, and the period between December 2019 and December 2020 was selected as time frame.

The texts of the news items were stored in *Excel* spreadsheets; in addition to that, it was decided to take prints of the contents that, *a priori*, had raised doubts as to the veracity of the facts presented. After storing the news items, the inclusion and exclusion criteria were read and applied. The inclusion criteria were as follows: posts containing the words COVID-19, corona, covid, diabetes, DM and posts containing recommendations or precautions that people with or without DM should take in relation to the coronavirus.

Posts not exclusively related to people with DM were included, as the contents were intended for general care that could also be useful for people with DM, such as food care to prevent COVID-19. News items involving children and pregnant women, in languages other than Portuguese, English or Spanish, memes, cartoons and diverse information with political contents or not related to health were excluded.

After selection of the news items and organization of the material, the thematic content analysis was carried out with a comprehensive and exhaustive reading to impregnate the material (view of the whole and apprehension of the particularities), exploration of the material (identification of the nuclei of meaning and of broader themes) and, finally, elaboration of the interpretive synthesis that dialogs with the objective, with the guiding question and with the conceptual theoretical framework.[26]

The conceptual framework was supported by the current scientific production on the topic (COVID-19 and DM) with searches in scientific databases and in materials published by the SBD and the MS. This theoretical framework was used to analyze and classify the diverse information as true or false. In addition, it was verified whether the news items posted had sources based on competent bodies or scientific articles.

It was not necessary to submit the study to the Research Ethics Committee because the information provided in *Twitter*, SBD and MS are in a public space, open and accessible to the population. However, in relation to the ethical issues, the recommendations on anonymity of people, reliability of information and respect for the policy of using *Twitter* were followed.

RESULTS

Figure 1 illustrates the selection process of the news items that comprised the sample of the current study according to the eligibility criteria and to the reasons for exclusion. In *Twitter*, 7,523 posts were retrieved and 71 were selected. In the SBD website, "Diabetes in the COVID-19 era" tab,[23] in the clarification note on COVID-19, 24 questions and answers were obtained and, in the tab entitled "Frequently Asked Questions: Frequent doubts about COVID-19 and diabetes", 11 questions and answers were obtained. Of the 35 news items, 10 were duplicates and eight questions were selected. In the MS website, it was possible to retrieve 83 news items and, of these, 31 were selected. Thus, 110 news items were analyzed.

The questions and answers selected in the SBD website were the following: "Why are people with diabetes in the highest risk group of infection in relation to COVID-19?"; "Are people with diabetes in the highest risk group for developing severe forms of the disease?"; "Is the risk of complications from COVID-19 greater for both Type 1 and Type 2 diabetes patients?"; "Is there any medication for the treatment of the coronavirus infection? Is this different for people with diabetes?"; "Is there any treatment with alternative medications that benefit or prevent people with diabetes from becoming infected with coronavirus?"; "Does taking vitamin C or any other type of supplement lower the risk of COVID-19?"; "Which medication should not be used by people with diabetes, with suspected or confirmed coronavirus infection?" and "Should people with diabetes who are taking Captopril, Enalapril, Losartan, Aspirin or Pioglitazone stop treatment?".

In the content analysis, the news items were organized into five thematic categories: "food products and substances", "socioeconomic status and life habits", "medications", "COVID-19 and DM" and "severity and risk factors". Evaluation of the broadcast content was carried out based on the scientific theoretical framework and will be further explored in the Discussion section of this study. In addition to that, the information was evaluated regarding the content conveyed, that is, whether it was false information (fake news), under study, incorrect or true (Table 1).
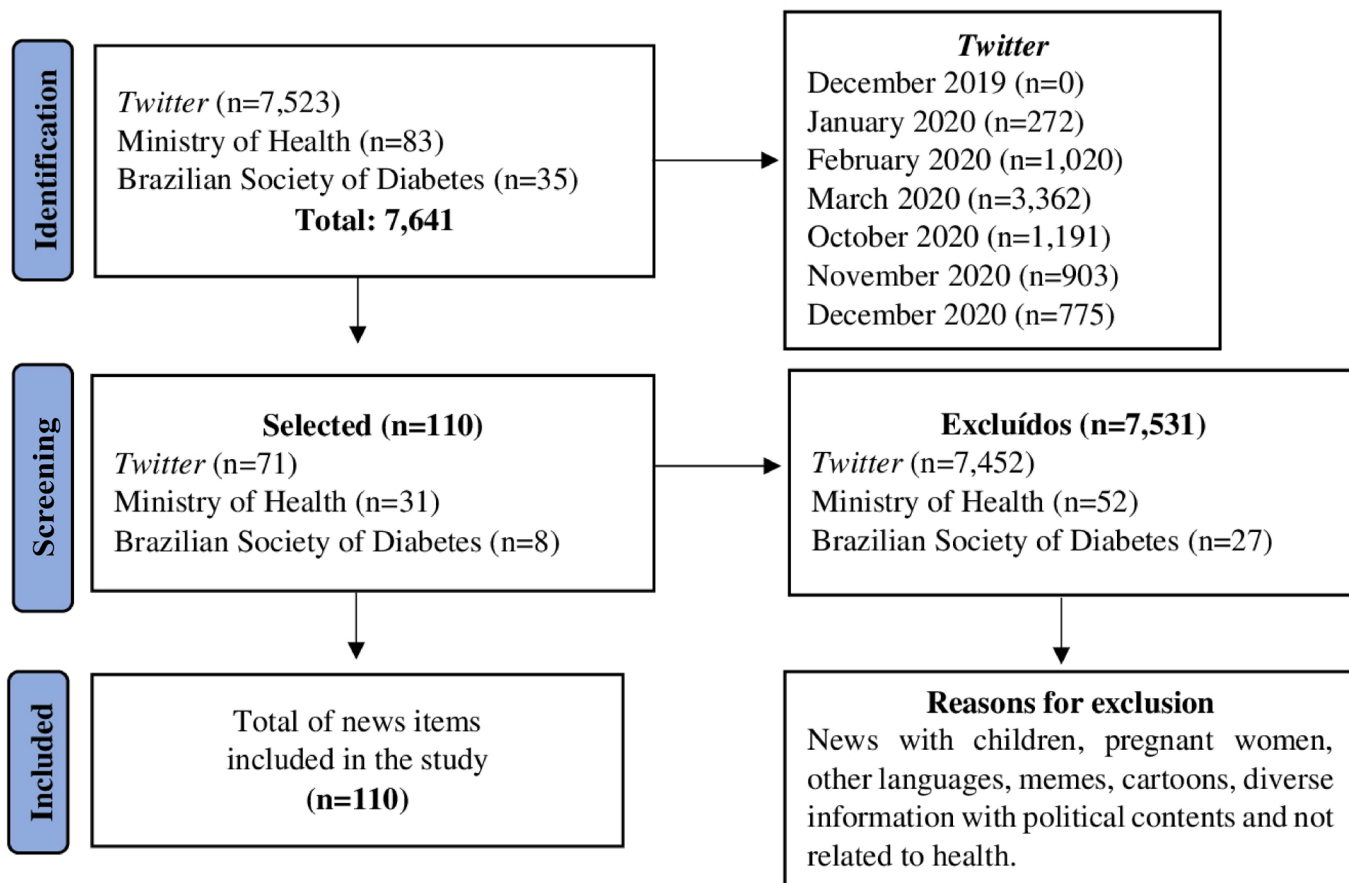
Figure 1. Flow corresponding to the selection process of the news items Ribeirão Preto, São Paulo, Brazil, 2021.

The so-called incorrect news is correct information that has been distorted, both by exaggeration when reporting the matter and by partial disclosure, impairing correct interpretation of the fact. As an example, there is a news report that vitamin D prevents diabetes and that, in deaths due to COVID-19, deficiency of this vitamin was observed.

The questions provided in the SBD website are related to fake news transmitted on the social media, although they were not identified. The answers released by the SBD aimed at clarifying and disseminating the best information about the complications from COVID-19 in people with DM. Thus, the answers were considered in this study, and they were classified as true. In the MS website, the news item and clarification on the content conveyed are made available. Therefore, the study considered the news items analyzed by the MS, and they were classified as false. It is worth noting that the MS also classifies news items as true or false.

Among the news items transmitted, it is possible to observe that most (80%) of the posts were fake news (n=88), with only nine true reports. It was observed that none of the news items indicated the source, that is, a reference to competent bodies or articles; some contents alluded to the opinions of health professionals, even though they were not identified by name, specialty or workplace. In relation to the diverse information denying the fake news in the MS website and the answers in the SBD website, they also did not indicate the sources. Chart 1 presents some examples of news items published in *Twitter* and in the MS classified as fake news.

DISCUSSION

The results of the present study show that 80% of the news published were false and without reference sources. The literature points out that fake news is shared much more than information based on scientific evidence.[27,28] This phenomenon is amplified with the social networks and media as they are the main mass communication means and allow for fast information dissemination.[11]

In this context, individuals become propagators and interlocutors of this information. However, it is important that people know how to differentiate between true and false information, as well as that based on scientific evidence from opinions.[29] However, it can be very difficult for the population to distinguish between true and false news.[30]

With the advent of the COVID-19 pandemic, many uncertainties and doubts arose about the disease and people

Table 1. Classification of the news items according to thematic category and nuclei of meanings. Ribeirão Preto, São Paulo, Brazil, 2021.

Thematic Category	Nuclei of meaning	Twitter (n=71)				SBD (n=8)	MS (n=31)
		FA	US	HA	TR	TR	FA
Food products and substances	Food	05					13
	Vitamins	01		02		02	04
	Snake poison	01					
	Cleaning materials	01		01			01
	Cannabidiol Oil/Marijuana	01	01				
	Consecrated oil						01
Socioeconomic status and life habits	Economically favored	12					
	Nationality	01					
	Physical activity	01					
	Religiousness	04					
Medications	Diabetes and Hypertension	01		01			
	Chloroquine/Antiviral cocktail	02				01	04
	Herbal/Others	01	01		01	03	
COVID-19 and DM	Surgery		01				
	Vaccination	01					03
	Pharmaceutical industry	01					
	Mask	01					02
	Blood type	01					
	Viral inoculation	01					
	Coronavirus causes diabetes		03				
	Origin	05					03
Severity and risk factors	Glucose		01				
	Insulin	01					
	Comorbidities	14		02		03	
	Pneumonia	01					
Total		**57**	**07**	**06**	**01**	**08**	**31**

FA: False; US: Under study; HA: Hasty; TR: True

sought information on the social media. Faced with this search and the growing number of false information circulating about COVID-19, the health agencies and the press were mobilized with the aim of denying this information without due grounds.[31] The COVID-19 pandemic highlighted the urgency of working on ways to circulate knowledge, in dialog with society, to strengthen the social recognition of science.[32] Thus, it is evidenced that the media are also of fundamental importance in the propagation of education in health and as a mediator of health communication.[27]

Five categories emerged from the qualitative analysis of the news items. In the discussion of the news items listed in the categories, those of greater relevance in the theme were selected, given the extensive amount of news. It is important to highlight that most of the news items chosen deal with fake news.

In the first thematic category entitled "food products and substances", the most discussed topics were about the use of food products and substances with the promise that they could prevent and cure COVID-19, and some news items dealt with the cure for diabetes and other diseases. The food products and substances mentioned were the following: immunological teas, whiskey and honey, drinking water every 15 minutes, coffee, coconut water, teas in general, special water developed in the

Chart 1. List of *Fake News* topics found on three information dissemination platforms. Ribeirão Preto, São Paulo, Brazil, 2021.

Thematic Category	News Item	Media	
		MS	***Twitter***
Food products and substances	Coconut recipe that cures coronavirus	X	
	Vitamin D also helps prevent diabetes, heart attack and stroke. People who died due to coronavirus were vitamin D deficient		X
	I swear, from what I've "heard", coconut water is the answer to: diabetes, kidney disease, liver disease, hypertension, cholesterol control, coronavirus, drugs: we found the elixir of life!		X
	Coffee prevents coronavirus	X	
	Hot bicarbonate lemon tea cures coronavirus	X	
	Consecrated oil to cure coronavirus	X	
	Vitamin C cures coronavirus, which came from animals, and lemon water that cures cancer	X	
	Video - Vitamin D and the prevention of the new coronavirus	X	
Socioeconomic status and life habits	Both coronavirus and diabetes are diseases of high purchasing power		X

laboratory, snake venom antigen injection, use of Cannabidiol oil, smoking marijuana, use of vitamins C and D and bleach ingestion. All these news items were classified as false as there is no mention in the literature to any specific drug to treat COVID-19 or cure COVID-19 and DM.[25,33]

IN some cases, the use of marijuana and Cannabidiol oil (CBD) can strengthen the immune system and collaborate in the treatment of some diseases, which might assist in the management of COVID-19 and DM. The crude CBD extract causes a reduction in the secretion levels of interleukin 6 (IL-6) and interleukin 8 (IL-8), and the high concentrations of both CBD and tetrahydrocannabidiol (THC) were evaluated in relation to their anti-inflammatory properties. In this study, THC showed low anti-inflammatory action, whereas CBD presented considerable activity in reducing the levels of IL-6 and IL-8 secreted in lung epithelial cells. COVID-19 causes an effect on the body known as a cytokine storm, especially of the IL-8 type in the severe forms of COVID-19. Given this scenario, it is important to mention that results on the anti-inflammatory action of CBD were once observed in a research study carried out *in vitro*,[34] therefore presenting scientific grounds. However, there is no study in humans, which requires further studies on the theme.

Regarding the use of vitamins C and D, the news items conveyed their use as a prevention means against contamination by coronavirus or as a prevention and cure source for the severe form of the disease. Regarding both vitamins, in the COVID-19 scenario, it was found that vitamin D can prevent the cytokine storm in patients with COVID-19 and, in parallel, a poor prognosis of the disease was observed in people with deficiency of this vitamin. However, the levels of vitamin D in plasma that

act as a risk factor for COVID-19 are yet unknown. Vitamin C acts to attenuate the excessive immune responses in individuals with COVID-19, with one of these mechanisms preventing hyperactivation of the immune cells through the inhibition of glyceraldehyde 3-phosphate dehydrogenase (GAPDPH). This inhibition might reduce adenosine triphosphate production and immune cell activation. Thus, there are still no studies that can prove the relationships and direct benefits of vitamins C and D in the course of COVID-19.[35]

With regard to the relationship between DM and vitamin D, preliminary studies suggest that the latter acts as a protective factor for Type 1 DM; however, clinical trials have shown low power in their results, evidencing that more studies are needed to prove and evaluate the impact of vitamin supplementation in the prevention or protection against DM.[36]

The second category referred to as "socioeconomic status and life habits" encompasses the most favored social classes, nationality, physical activity and religiosity. Some topics addressed associated that people with better economic conditions are at greater risk of developing COVID-19. A study that addresses the relationships of the pandemic in Brazil, in the context of the vulnerabilities related to gender, race and class, showed that, although the first infected individuals in the country enjoyed a more privileged economic status, infection by the virus occurs in the same way for all people;[37] consequently, this news item is characterized as false, as people with the most diverse economic statuses are susceptible to contamination by coronavirus and to developing COVID-19. Although all people are susceptible to contamination, it is important to reflect that the social determination of the health-disease process can exert an influence on spread

of the infection, on the morbidity and mortality associated with COVID-19 and, especially in Brazil, on factors related to social inequality and to the inequities in access to health services.[38]

Religion was used as a justification for the current events. Thus, the virus would have been sent by a divine entity as punishment, or this entity would have been the only way to cure COVID-19. There is still no scientific data linking certain religious practices and healing in COVID-19. However, it cannot be ignored that, in certain situations, faith-based practice and belief have promoted some health benefits. However, there are still no studies relating this interface between COVID-19 and DM. Therefore, it is believed that, due to the significant power that religion has to influence people, it can be used as a resource to promote education in health against COVID-19 and DM.[39]

The third category deals with "medications" for DM and hypertension, chloroquine/antiviral cocktail and herbal medications/others. A topic that deserves to be highlighted refers to the discontinuation of the use of drugs for DM and hypertension, which is not recommended by specialists unless the person undergoes a detailed evaluation with the health professional. It is believed that this fake news has been spread as a result of studies that are being carried out to determine whether there is a relationship between Angiotensin Converting Enzyme (ACE) inhibitors in the evolution of COVID-19; therefore, discontinuation of these medications without a first professional evaluation can cause harms to the health of this population.[40]

A systematic review with 234 studies identified that there is diverse evidence corroborating the effectiveness of the use of chloroquine as a treatment for COVID-19; however, use of this drug is experimental, requiring approvals from the committees of ethics in research with human beings and peer review of these studies. Some articles only evaluated the efficiency and effectiveness of chloroquine in suppressing *in vitro* viral replication. Thus, there is a need for deeper studies to assess applicability and clinical safety.[25,41-43]

The news item published about phytotherapy refers to diabetes capsules for the cure of COVID-19 and diabetes. No scientific research studies on diabetes were found in the databases; however, in the gray literature (*Google* search website), advertisements for these capsules were identified, which are composed of different plants, herbs and trees that would have the effect of reducing blood glucose.

Regarding the use of herbal medications, in general, the benefits of plants and natural antiviral substances in the treatment and prevention of COVID-19 are still being studied. However, to the present day, only incipient studies have been found, without any evidence of favorable or toxic effects in the use of these plants and substances in the clinical practice to treat COVID-19.[44,45] Therefore, the topics that contemplate this category were classified as false.

The fourth category referred to as "COVID-19 and DM" encompasses issues about both diseases, such as: metabolic surgery to cure DM, vaccine for COVID-19, the role of the pharmaceutical industries that do not produce medications for

diseases such as cancer, coronavirus and DM (which have a cure in the view of the news items published), ineffectiveness and use of masks, blood type and COVID-19 severity, virus inoculation in those who have DM, with coronavirus as the cause of DM and the origin of the virus.

The vaccine-related news items report that vaccines were developed using the recombination technique to cure DM, however, the existing vaccine is intended solely for COVID-19.[46] There is no description in the literature about vaccines for the treatment or cure of DM; what we have is a research study that approaches molecular agriculture as a means to obtain molecules, not specified in the study, aimed at the development of an oral vaccine for Type 1 DM, made through the recombination of Deoxyribonucleic Acid (DNA) based on the beet virus.[47]

Regarding use and efficiency of the face masks, it was identified that they serve as a form of protection, mainly in places where the lockdown is not sustainable. In this way, the use of masks in public places allows a barrier for physical distancing as one of the measures to reduce spread of the virus that causes COVID-19.[48] Regarding the ABO blood type, it was verified that group A and group O individuals presented a higher and lower risk, respectively, of becoming infected; however, the information is still under study.[49]

As for the development of post-COVID-19 DM, a number of studies indicate that this virus binds to the Angiotensin Converting Enzyme 2 (ACE2) receptors in pancreatic cells, which can cause a a substantial reduction in the secretion of the insulin hormone. In addition, there are indications that COVID-19 can damage pancreatic beta cells and also cause a large amount of pro-inflammatory cytokines.[50] However, more studies should be carried out in order to corroborate or not the information. Thus, the claims that there are research studies which prove that COVID-19 causes DM in people with no previous history of the disease prior to COVID-19 and that individuals with DM are immune to such viral infection are false. Consequently, the information that the virus does not infect the immune system of individuals with diabetes is equally false.

The last category referred to as "severity and risk factors" comprises the news items about glucose (hyperglycemia), insulin, comorbidities and pneumonia. Impairment of the pancreas cells, previously described, can be related to transient or non-transient hyperglycemia, observed in 51% of the people with COVID-19. However, more research studies need to be developed to evaluate these possible pathophysiological mechanisms,[51] in order to corroborate or not the information that asserts that COVID-19 causes hyperglycemic state in people who have contracted the infection.

Because of the reduction in the amount of insulin secreted, some individuals with COVID-19 also present high insulin resistance, especially those with serious diseases. From this perspective, it is also concluded that further studies are needed, given that it is not known whether this situation occurs as a result of defects in the insulin receptors in the main organs in association with

glucose metabolism or if interference in the insulin receptors happens through signaling of the virus.[52]

Regarding the comorbidities, a literature review identified various clinical factors that predispose to the severe form of the course of COVID-19: advanced age and comorbidities such as cardiovascular diseases, chronic kidney disease, chronic lung disease, especially Chronic Obstructive Pulmonary Disease (COPD), DM, hypertension, immunosuppression, obesity and sickle cell disease. Such conditions increase the chances of the patient being intubated or dying.[53,54]

Also in this thematic category, the information that COVID-19 can contribute to the immediate development of pneumonia was heavily disseminated. That news item was classified as hasty, as COVID-19 can cause serious respiratory tract diseases like Acute Respiratory Distress Syndrome (ARDS) and pneumonia, although not all infected people develop this type of complication.[55]

Finally, in relation to the origin of the virus, it is believed that it was initially transmitted in a Chinese market, which sells live animals. Although its origin has not yet been confirmed, it is known that animals such as snakes, bats and pangolins can transmit SARS-CoV-2.[55]

Fake news items have the potential to influence the behavior of the population. Thus, the role of scientists and health professionals in the fight against fake news is of paramount importance, mainly when proposing measures to help people and the community to distinguish true from false news items, in addition to guiding the need to verify the information received before sharing it. Coordinated global efforts between all actors involved (health organizations, governments, media and individuals) must be undertaken to control and mitigate the harmful effects of fake news.[56,57]

CONCLUSION

From what was exposed in this article, it was observed that most of the posts were fake news; therefore, the impact of the social media on the dissemination of information, whether true or false, is perceived. In particular, in the pandemic context, excess of disinformation was found, given the disputes over knowledge and powers. This scenario causes significant damage to the communication of the competent bodies and scientific communities with the population, hindering access to information with scientific grounds and, consequently, generating a great loss in the conduction of the epidemiological scenario.

The main limitation of the current study is linked to the analysis of only three media, therefore being essential to carry out studies in other social media such as *WhatsApp*, *Facebook*, *Instagram* and *YouTube*. Another limitation was the time frame of less than one year in *Twitter*, which may have limited the types of news items broadcast and thus influenced the results obtained.

However, these results indicate the relevance of the theme and point to the need to resort to health communication as a powerful tool to be used by scientists and health professionals to give visibility to information with scientific evidence, in an accessible and understandable way to people via social media.

In addition, the importance of health communication is finally highlighted in order to provide opportunities for the transposition of the "sciences" carried out in universities to the community.

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Study design. Thalita da Silva Ribeiro. Angelina Lettiere Viana. Paola Cristina de Castro.

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REFERENCES

1. Ministério da Saúde (BR). Protocolo de manejo clínico do coronavírus (COVID-19) na Atenção Primária à Saúde [Internet]. Brasília: Ministério da Saúde; 2020. [citado 2021 out 12]. Disponível em: https://saude.rs.gov.br/upload/arquivos/202004/14140606-4-ms-protocolomanejo-aps-ver07abril.pdf

2. World Health Organization. Coronavirus (COVID-19) dashboard [Internet]. Geneva: WHO; 2021 [citado 2021 set 11]. Disponível em: https://covid19.who.int/

3. Ministério da Saúde (BR). COVID-19 no Brasil. [Internet]. Brasília: Ministério da Saúde; 2020 [citado 2021 nov 08]. Disponível em: https://qsprod.saude.gov.br/extensions/covid-19_html/covid-19_html.html

4. Sociedade Brasileira de Diabetes. Notas de esclarecimentos da Sociedade Brasileira de Diabetes sobre o coronavírus (COVID-19) [Internet]. São Paulo: SBD; 2020 [citado 2021 jul 29]. Disponível em: https://www.diabetes.org.br/covid-19/notas-de-esclarecimentos-da-sociedade-brasileira-de-diabetes-sobre-o-coronavirus-covid-19/.

5. Wu C, Chen X, Cai Y, Xia J, Zhou X, Xu S et al. Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. JAMA Intern Med. 2020;180(7):934-43. http://dx.doi.org/10.1001/jamainternmed.2020.0994. PMid:32167524.

6. Ministério da Saúde (BR). Guia de vigilância epidemiológica: emergência de saúde pública de importância nacional pela doença pelo coronavírus 2019. Vigilância integrada de síndromes respiratórias agudas doença pelo coronavírus 2019, influenza e outros vírus respiratórios [Internet]. Brasília: Ministério da Saúde; 2020. [citado 2021 ago 05]. Disponível em:

https://portaldeboaspraticas.iff.fiocruz.br/biblioteca/guia-de-vigilancia-epidemiologica-emergencia-de-saude-publica-de-importancia-nacional/.

7. Landstra CP, Koning EJP. COVID-19 and Diabetes: understanding the interrelationship and risks for a severe course. Front Endocrinol. 2021;12:649525. http://dx.doi.org/10.3389/fendo.2021.649525. PMid:34220706.

8. Falcão P, Souza AB. Pandemia de desinformação: as fake news no contexto da Covid-19 no Brasil. RECIIS. 2021;15(1):55-71. http://dx.doi.org/10.29397/reciis.v15i1.2219.

9. Neto M, Gomes TO, Porto FR, Rafael RMR, Fonseca MHS, Nascimento J. Fake news no cenário da pandemia de Covid-19. Cogitare Enferm. 2020;25. http://dx.doi.org/10.5380/ce.v25i0.72627.

10. Silva MAR, Melo SA. Fake news: fronteiras do jornalismo e circulação de (des)informação sobre saúde. RECIIS. 2020;14(1):1-5. http://dx.doi.org/10.29397/reciis.v14i1.2047.

11. Hua J, Shaw R. Corona Virus (COVID-19) "infodemic" and emerging issues through a data lens: the case of China. Int J Environ Res Public Health. 2020;17(7):2309. http://dx.doi.org/10.3390/ijerph17072309. PMid:32235433.

12. Zarocostas J. How to fight an infodemic. Lancet. 2020;395(10225):676. http://dx.doi.org/10.1016/S0140-6736(20)30461-X. PMid:32113495.

13. Organização Pan-Americana da Saúde. Entenda a infodemia e a desinformação na luta contra a COVID-19. Brasil: OPAS/OMS [Internet]. Brasília: OPAS; 2020 [citado 2021 nov 03]. Disponível em https://iris.paho.org/bitstream/handle/10665.2/52054/Factsheet-Infodemic_por.pdf?sequence=16

14. Freire NP, Cunha ICKO, Ximenes No FRG, Machado MH, Minayo MCS. A infodemia transcende a pandemia. Cien Saude Colet. 2021;26(9):4065-8. http://dx.doi.org/10.1590/1413-81232021269.12822021.

15. Posetti J, Bontcheva K. Desinfodemia: decifrar a desinformação sobre a COVID-19 [Internet]. Paris: UNESCO; 2020 [citado 2021 nov 03]. Disponível em: https://unesdoc.unesco.org/ark:/48223/pf0000374416_por

16. Ministério da Saúde (BR). Saúde sem fake news [Internet]. Brasil: Ministério da Saúde; 2021 [citado 2021 nov 06]. Disponível em: https://antigo.saude.gov.br/fakenews

17. Secosan I, Virga D, Crainiceanu ZP, Bratu LM, Bratu T. Infodemia: another enemy for romanian frontline healthcare workers to fight during the COVID-19 outbreak. Medicina. 2020;56(12):679. http://dx.doi.org/10.3390/medicina56120679. PMid:33317190.

18. Mattos AM, Costa IZK, Neto M, Rafael RMR, Carvalho EC, Porto F. Fake News em tempos de COVID-19 e seu tratamento jurídico no ordenamento brasileiro. Esc Anna Nery. 2021;25(spe):e20200521. http://dx.doi.org/10.1590/2177-9465-ean-2020-0521.

19. Marconi MA, Lakatos EM. Fundamentos de metodologia científica. São Paulo: Editora Atlas; 2003.

20. Prodanov CC, Freitas EC. Metodologia do trabalho científico: métodos e técnicas da pesquisa e do trabalho acadêmico. Novo Hamburgo: Editora Feevale; 2013.

21. Atehortua NA, Patino S. COVID-19, a tale of two pandemics: novel coronavirus and fake news messaging. Health Promot Int. 2021;36(2):524-34. http://dx.doi.org/10.1093/heapro/daaa140. PMid:33450022.

22. Sociedade Brasileira de Diabetes. Diabetes na era COVID-19 [Internet]. São Paulo: SBD; 2020 [citado 2020 out 29]. Disponível em: https://diabetes.org.br/covid-19/

23. Sociedade Brasileira de Diabetes. Notas de esclarecimentos da Sociedade Brasileira de Diabetes sobre o coronavírus (COVID-19) [Internet]. São Paulo: SBD; 2020 [citado 2021 out 20]. Disponível em: https://diabetes.org.br/covid-19/notas-de-esclarecimentos-da-sociedade-brasileira-de-diabetes-sobre-o-coronavirus-covid-19/

24. Sociedade Brasileira de Diabetes. Perguntas frequentes [Internet]. São Paulo: SBD; 2020. [citado 2021 out 21] Disponível em: https://diabetes.org.br/covid-19/perguntas-frequentes/

25. Ministério da Saúde (BR). Coronavírus fake news [Internet]. Brasil: Ministério da Saúde; 2021. [citado 2021 nov 05] Disponível em: https://antigo.saude.gov.br/fakenews/

26. Gomes R. Análise e interpretação de dados de pesquisa qualitativa. In: Minayo MCS, Deslandes SF, Gomes R, organizadores. Pesquisa social: teoria, método e criatividade. Petrópolis: Vozes; 2018. p. 72-95.

27. Mheidly N, Fares J. Leveraging media and health communication strategies to overcome the COVID-19 infodemic. J Public Health Policy. 2020;41(4):410-20. http://dx.doi.org/10.1057/s41271-020-00247-w. PMid:32826935.

28. Lewandowsky S, Ecker UKH, Seifert CM, Schwarz N, Cook J. Misinformation and its correction: continued influence and successful debiasing. Psychol Sci Public Interest. 2012 dez;13(3):106-31. http://dx.doi.org/10.1177/1529100612451018. PMid:26173286.

29. França T, Rabello ET, Magnago C. As mídias e as plataformas digitais no campo da Educação Permanente em Saúde: debates e propostas. Saúde Debate. 2019;43(spe1):106-15. http://dx.doi.org/10.1590/0103-11042019s109.

30. Giordani RCF, Donasolo JPG, Ames VDB, Giordani RL. A ciência entre a infodemia e outras narrativas da pós-verdade: desafios em tempos de pandemia. Cien Saude Colet. 2021;26(7):2863-72. http://dx.doi.org/10.1590/1413-81232021267.05892021.

31. Sousa Júnior JH, Raasch M, Soares JC, Ribeiro LVHAS. Da desinformação ao caos: uma análise das Fake News frente à pandemia do Coronavírus (COVID-19) no Brasil. Cadernos de Prospecção. 2020;13(2):331-46. http://dx.doi.org/10.9771/cp.v13i2%20COVID-19.35978.

32. Caetano K, Nishida L, Tavares R, Koster I. Desafios para o trabalho da disseminação científica em saúde pública em contexto de disseminação do coronavírus. RECIIS. 2021;15(1):233-48. http://dx.doi.org/10.29397/reciis.v15i1.2202.

33. Vellingiri B, Jayaramayya K, Iyer M, Narayanasamy A, Govindasamy V, Giridharan B et al. COVID-19: a promising cure for the global panic. Sci Total Environ. 2020;725:138277. http://dx.doi.org/10.1016/j.scitotenv.2020.138277. PMid:32278175.

34. Anil SM, Shalev N, Vinayaka AC, Nadarajan S, Namdar D, Belausov E et al. Cannabis compounds exhibit anti-inflammatory activity in vitro in COVID-19-related inflammation in lung epithelial cells and pro-inflammatory activity in macrophages. Sci Rep. 2021;11(1):1462. http://dx.doi.org/10.1038/s41598-021-81049-2. PMid:33446817.

35. Bae M, Kim H. Mini-Review on the Roles of Vitamin C, Vitamin D, and Selenium in the Immune System against COVID-19. Molecules. 2020;25(22):5346. http://dx.doi.org/10.3390/molecules25225346. PMid:33207753.

36. Maddaloni E, Cavallari I, Napoli N, Conte C. Vitamin D and Diabetes Mellitus. Front Horm Res. 2018;50:161-76. http://dx.doi.org/10.1159/000486083. PMid:29597238.

37. Estrela FM, Soares CFS, Cruz MA, Silva AF, Santos JRL, Moreira TMO et al. Covid-19 pandemic: reflecting vulnerabilities in the light of gender, race and class. Cien Saude Colet. 2020;25(9):3431-6. http://dx.doi.org/10.1590/1413-81232020259.14052020. PMid:32876261.

38. Figueiredo AM, Figueiredo DCMM, Gomes LB, Massuda A, Gil-Gracía E, Vianna RPT. Social determinants of health and COVID-19 infection in Brazil: an analysis of the pandemic. Rev Bras Enferm. 2020;73(Suppl2):e20200673. http://dx.doi.org/10.1590/0034-7167-2020-0673. PMid:33206820.

39. Hashmi FK, Iqbal Q, Haque N, Saleem F. Religious cliché and stigma: a brief response to overlooked barriers in COVID-19 management. J Relig Health. 2020;59(6):2697-700. http://dx.doi.org/10.1007/s10943-020-01063-y. PMid:32643082.

40. Reynolds HR, Adhikari S, Pulgarin C, Troxel AB, Iturrate E, Johnson SB et al. Renin-angiotensin-aldosterone system inhibitors and risk of Covid-19. N Engl J Med. 2020;382(25):2441-8. http://dx.doi.org/10.1056/NEJMoa2008975. PMid:32356628.

41. Majumder J, Minko T. Recent developments on therapeutic and diagnostic approaches for COVID-19. AAPS J. 2021;23(1):14. http://dx.doi.org/10.1208/s12248-020-00532-2. PMid:33400058.

42. Stoian AP, Catrinoiu D, Rizzo M, Ceriello A. Hydroxychloroquine, COVID-19 and diabetes. Why it is a different story. Diabetes Metab Res Rev. 2021;37(2):e3379. http://dx.doi.org/10.1002/dmrr.3379. PMid:32592507.

43. Cortegiani A, Ingoglia G, Ippolito M, Giarratano A, Einav S. A systematic review on the efficacy and safety of chloroquine for the treatment of COVID-19. J Crit Care. 2020;57:279-83. http://dx.doi.org/10.1016/j.jcrc.2020.03.005. PMid:32173110.

44. Komolafe K, Komolafe TR, Fatoki TH, Akinmoladun AC, Brai BIC, Olaleye MT et al. Coronavirus disease 2019 and herbal therapy: pertinent issues relating to toxicity and standardization of phytopharmaceuticals. Rev Bras Farmacogn. 2021;11:1-20. http://dx.doi.org/10.1007/s43450-021-00132-x. PMid:33727754.

45. Gour A, Manhas D, Bag S, Gorain B, Nandi U. Flavonoids as potential phytotherapeutics to combat cytokine storm in SARS-CoV-2. Phytother Res. 2021;35(8):4258-83. http://dx.doi.org/10.1002/ptr.7092. PMid:33786876.

46. LiverTox. LiverTox: clinical and research information on drug-induced liver injury [Internet]. Bethesda: National Institute of Diabetes and Digestive and Kidney Diseases; 2012 [citado 2021 nov 05]. Disponível em: https://www.ncbi.nlm.nih.gov/books/NBK570468/

47. Santoni M, Bertini E, Zampieri R, Cuccurullo A, Commisso M, Gecchele E et al. Transient expression in red beet of a biopharmaceutical candidate vaccine for Type-1 Diabetes. J Vis Exp. 2019;(145):e59298. http://dx.doi.org/10.3791/59298. PMid:30958463.

48. Esposito S, Principi N, Leung CC, Migliori GB. Universal use of face masks for success against COVID-19: evidence and implications for prevention policies. Eur Respir J. 2020;55(6):2001260. http://dx.doi.org/10.1183/13993003.01260-2020. PMid:32350103.

49. Muñiz-Diaz E, Llopis J, Parra R, Roig I, Ferrer G, Grifols J et al. Relationship between the ABO blood group and COVID-19 susceptibility, severity and mortality in two cohorts of patients. Blood Transfus. 2021;19(1):54-63. http://dx.doi.org/10.2450/2020.0256-20. PMid:33196417.

50. Heaney AI, Griffin GD, Simon EL. Newly diagnosed diabetes and diabetic ketoacidosis precipitated by COVID-19 infection. Am J Emerg Med. 2020;38(11):2491.e3-4. http://dx.doi.org/10.1016/j.ajem.2020.05.114. PMid:32536476.

51. Ilias I, Zabuliene L. Hyperglycemia and the novel Covid-19 infection: possible pathophysiologic mechanisms. Med Hypotheses. 2020;139:109699. http://dx.doi.org/10.1016/j.mehy.2020.109699. PMid:32240876.

52. Sathish T, Kapoor N, Cao Y, Tapp RJ, Zimmet P. Proportion of newly diagnosed diabetes in COVID-19 patients: a systematic review and meta-analysis. Diabetes Obes Metab. 2021;23(3):870-4. http://dx.doi.org/10.1111/dom.14269. PMid:33245182.

53. Marin BG, Aghagoli G, Lavine K, Yang L, Siff EJ, Chiang SS et al. Predictors of COVID-19 severity: a literature review. Rev Med Virol. 2021;31(1):1-10. http://dx.doi.org/10.1002/rmv.2146. PMid:32845042.

54. Li X, Xu S, Yu M, Wang K, Tao Y, Zhou Y et al. Risk factors for severity and mortality in adult COVID-19 inpatients in Wuhan. J Allergy Clin Immunol. 2020;146(1):110-8. http://dx.doi.org/10.1016/j.jaci.2020.04.006. PMid:32294485.

55. Ahn DG, Shin HJ, Kim MH, Lee S, Kim HS, Myoung J et al. Current status of epidemiology, diagnosis, therapeutics, and vaccines for Novel Coronavirus Disease 2019 (COVID-19). J Microbiol Biotechnol. 2020;30(3):313-24. http://dx.doi.org/10.4014/jmb.2003.03011. PMid:32238757.

56. Barcelos TN, Muniz LN, Dantas DM, Cotrim Jr DF, Cavalcante JR, Faerstein E. Análise de fake news veiculadas durante a pandemia de COVID-19 no Brasil. Rev Panam Salud Publica. 2021;45:e65. http://dx.doi.org/10.26633/RPSP.2021.65. PMid:34007263.

57. Domingues L. Infodemic: a threat to global public health during and after the Covid-19 pandemic. RECIIS. 2021;15(1):12-7. http://dx.doi.org/10.29397/reciis.v14i4.2237.

ERRATUM | ERRATA

Erratum: Health communication about COVID-19 and Diabetes Mellitus in social media: True and False

Errata: Comunicação em saúde sobre COVID-19 e Diabetes Mellitus em mídias sociais: verdadeiro e falso

In the article "Health communication about COVID-19 and Diabetes Mellitus in social media: true and false", DOI number: 10.1590/2177-9465-EAN-2021-0358, published by Escola Anna Nery 2022;26(spe):e20210358 in chart 1:

Chart 1. List of *Fake News* topics found on three information dissemination platforms. Ribeirão Preto, São Paulo, Brazil, 2021

Thematic Category	News Item	Media	
		MS	*Twitter*
Food products and substances	Coconut recipe that cures coronavirus	X	
	Vitamin D also helps prevent diabetes, heart attack and stroke. People who died due to coronavirus were vitamin D deficient		X
	I swear, from what I've "heard", coconut water is the answer to: diabetes, kidney disease, liver disease, hypertension, cholesterol control, coronavirus, drugs: we found the elixir of life!		X
	Coffee prevents coronavirus	X	
	Hot bicarbonate lemon tea cures coronavirus	X	
	Consecrated oil to cure coronavirus	X	
	Vitamin C cures coronavirus, which came from animals, and lemon water that cures cancer	X	
	Video - Vitamin D and the prevention of the new coronavirus	X	
Socioeconomic status and life habits	Both coronavirus and diabetes are diseases of high purchasing power		X

Should be read:

Chart 1. List of subjects in two information channels (Twitter and Ministry of Health - MS) classified as false by both the Ministry of Health and the scientific literature. Ribeirão Preto, Sao Paulo, Brazil, 2021.

Thematic Category	News Item
Food products and substances	Coconut recipe that cures coronavirus **(MS)**[45,46]
	Vitamin D also helps prevent diabetes, heart attack and stroke. People who died due to coronavirus were vitamin D deficient *(Twitter)*[35,36]
	I swear, from what I've "heard", coconut water is the answer to: diabetes, kidney disease, liver disease, hypertension, cholesterol control, coronavirus, drugs: we found the elixir of life!
	Coffee prevents coronavirus **(MS)**[45,46]
	Hot bicarbonate lemon tea cures coronavirus **(MS)**[45,46]
	Consecrated oil to cure coronavirus **(MS)**[39]
	Vitamin C cures coronavirus, which came from animals, and lemon water that cures cancer **(MS)**[35,36]
	Video - Vitamin D and the prevention of the new coronavirus **(MS)**[35,36]
Socioeconomic status and life habits	Both coronavirus and diabetes are diseases of high purchasing power *(Twitter)* [37,38]
Medications	Medicine for COVID-19 (drug creation) **(MS)**[43,44]
	Chloroquine cures coronavirus, lassa, HIV, diabetes, hypertension and fever *(twitter)*[43,44]
	Drugs taken by thousands of people with high blood pressure and diabetes could increase risk of deadly coronavirus symptoms *(Twitter)* [40, 41]
COVID-19 and DM	Evidence suggests coronavirus can cause diabetes *(Twitter)* [51,52,53]
	Metabolic surgery is positioned as the best option for curing obesity-associated diabetes, diseases that represent risk factors for coronavirus infection *(Twitter)* [51,52,53]
	Poor quality masks distributed by the Ministry of Health **(MS)**[49]
	They created a selective virus, Chinese coronavirus, to solve the problem of overpopulation of the elderly and people with diseases such as diabetes, heart hypertension *(Twitter)*[56]
Severity and risk factors	Those who have died as a result of the coronavirus are the elderly, those with chronic diseases like diabetes, chronic kidney failure. The mask is not particularly useful because of the moisture from the breath (for this to be useful, you need to change the mask every 30 minutes) *(Twitter)*[54,55]
	Coronavirus does not get diabetes. it's against the law *(Twitter)* [51,52,53]
	Thai doctors cure coronavirus in 48 hours **(MS)**[33,42]
	New coronavirus causes pneumonia immediately **(MS)**[54,55]

Source: News items adapted from the Twitter and MS[25] platforms.

In the article "Health communication about COVID-19 and Diabetes Mellitus in social media: true and false", DOI number: 10.1590/2177-9465-EAN-2021-0358, published by Escola Anna Nery 2021;26(SpeCovid19):e20210358 in Conclusion:

CONCLUSION

From what was exposed in this article, it was observed that most of the posts were fake news; therefore, the impact of the social media on the dissemination of information, whether true or false, is perceived. In particular, in the pandemic context, excess of disinformation was found, given the disputes over knowledge and powers. This scenario causes significant damage to the communication of the competent bodies and scientific communities with the population, hindering access to information with scientific grounds and, consequently, generating a great loss in the conduction of the epidemiological scenario.

The main limitation of the current study is linked to the analysis of only three media, therefore being essential to carry out studies in other social media such as *WhatsApp*, *Facebook*, *Instagram* and *YouTube*. Another limitation was the time frame of less than one year in *Twitter*, which may have limited the types of news items broadcast and thus influenced the results obtained.

However, these results indicate the relevance of the theme and point to the need to resort to health communication as a powerful tool to be used by scientists and health professionals to give visibility to information with scientific evidence, in an accessible and understandable way to people via social media. In addition, the importance of health communication is finally highlighted in order to provide opportunities for the transposition of the "sciences" carried out in universities to the community.

Should be read:

CONCLUSION

From what was exposed in this article, it was observed that most of the posts were fake news; therefore, the impact of the social media on the dissemination of information, whether true or false, is perceived. In particular, in the pandemic context, excess of disinformation was found, given the disputes over knowledge and powers. This scenario causes significant damage to the communication of the competent bodies and scientific communities with the population, hindering access to information with scientific grounds and, consequently, generating a great loss in the conduction of the epidemiological scenario.

The main limitation of the current study is linked to the analysis of only two media, therefore being essential to carry out studies in other social media such as *WhatsApp*, *Facebook*, *Instagram* and *YouTube*. Another limitation was the time frame of less than one year in *Twitter*, which may have limited the types of news items broadcast and thus influenced the results obtained. Furthermore, it is recognized that the search for scientific studies on the subject occurred in a period where a large number of publications and preliminary studies related to the theme of this study can be observed.

However, these results indicate the relevance of the theme and point to the need to resort to health communication as a powerful tool to be used by scientists and health professionals to give visibility to information with scientific evidence, in an accessible and understandable way to people via social media. In addition, the importance of health communication is finally highlighted in order to provide opportunities for the transposition of the "sciences" carried out in universities to the community.