

Sharing Fake News about Health in the Cross-Platform Messaging App Whatsapp during the COVID-19 Pandemic: A Pilot Study

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Abstract

In the current scenario of the COVID-19 pandemic, a lot of false information has spread through social networks. This study aimed to characterize the types of fake news in health and the factors that influence its sharing. This is a descriptive cross-sectional observational study conducted by health scholars who analyzed the messages received in the WhatsApp network and the sociodemographic characteristics of sharers in the year 2020. Results: The level of education influences the spread of false news, and family members have a higher frequency of sharing these news. As for the type of content of fake news, the fabricated content and false context stood out as the most shared ones. The characteristic of the group of researchers may have influenced the receipt of a smaller amount of fake news, since they are able to recognize and refute.

Keywords: Fake news, WhatsApp, SARS-CoV-2, Pandemic.

Introduction

Technological advances were crucial for the development of communication, so the world became more connected due to greater digital interactivity. People began to have access to information immediately, thus acquiring the ability to disseminate it to any part of the world in a matter of seconds, whether true or not.

In this context, fake news are characterized by their contemporaneity, if there is a widely disseminated subject, there will certainly be fake news about this content. The current pandemic caused by the new Coronavirus, a public health emergency of international importance, has become the most discussed topic in different spheres of society, and many rumors about the disease have been detected by the Ministry of Health, requiring health authorities to adopt communicating and informing the population and press as fundamental strategies for coping with the pandemic. (Oliveira et al., 2020).

According to Wardle and Derakhshan (2017), with regard to content, the fake news are classified into seven types: skits and/or parodies, whose potential is misleading, without intent to cause damage; misleading content: makes use of misleading information in order to group a problem or individual; impostor content: is used on-site names, people, genuine information sources, but with false information with the intent to deceive; manufactured content: the content is 100% false, intended to deceive and harm the reader; false connection: when the image or text does not match the content presented; false context: when the content is true but is shared with false context; manipulated content: when the true information is handled with the purpose of deceiving the people.

Thanks to the emergence of social networks, messaging applications and the speed of information sharing, fake news has gained great potential for dissemination through the current tools used for communication in the world, with WhatsApp as the highlight, created in 2009 as an application (App) of multimedia sharing, which today is the most popular communication tool in countries like Brazil, India, and Mexico (Melo et al., 2019).

WhatsApp is easy to access, allowing users to exchange information that suits them individually or in

groups (Melo et al., 2019; Resende et al., 2019). Contains end-to-end encryption, so all text, voice, and media messages are protected; these documents are viewed only by those involved in communication (Resende et al., 2019). Worldwide, approximately 1.5 billion people use WhatsApp in 180 different countries (Melo et al., 2019). According to Teixeira and Santos (2020), around 120 million users in Brazil use this tool.

This application is considered by experts as the largest multiplier of fake news in a private digital environment with high interactivity index (Teixeira et al., 2020). Analyzing it as the main means of disseminating false news related to Coronavirus, there has been a higher frequency of falsified content compared to other social networks, such as Twitter, which reaches 14.1% while WhatsApp reaches 24.7% of shared fake news, mostly through textual messages, because they are common and easy to manipulate (Salaverría et al., 2020). Sharing fake news can be extremely harmful to health. An example of this phenomenon has been the growth of the anti-vaccination movement worldwide, causing a strong impact on the vaccination coverage of the population and causing the resurgence of infectious diseases previously controlled by immunization (Saraiva; Farias, 2019).

Faced with a still unknown scenario in the COVID-19 pandemic, there was an increase in the spread of false news with topics that addressed both the prevention of the disease and its possible treatments through miraculous therapies without a scientific basis, which can generate serious damage (Matos, 2020). The consequences affect the population in general by mitigating the risks of certain pathologies, as well as trivializing their care, making it impossible to cope effectively with these diseases. (Monnari; Son, 2019).

Therefore, health professionals emerge as pillars in combating false information, according to Lavorgna et al., (2018), the critical evaluation of health professionals tends to curb the impetus of the dissemination of fake news. However, despite the technical knowledge presented by these professionals, it is necessary to develop effective methods aimed at combating this false information, since there is a gap in relation to how to deal with these news (Ribeiro 2018). According to Castro et al., (2020), when an individual is inserted in the academic environment, there is a requirement in regard to reading capabilities and development of scientific and critical thinking, so the academic environment tends to suppress the spread of false news.

Based on the above, the objective of this study was to characterize the types of fake news in the health area and to denote the factors that influence sharing among a group of academics in this area during the COVID-19 pandemic, via the multi-platform application, WhatsApp. The following hypotheses were established: that sociodemographic aspects influence the sharing of information in the app; there is a predominance in the type of content of fake news shared during the COVID-19 pandemic, and groups consisting of individuals in the health area tend to receive less false news.

Methodology

A descriptive cross-sectional observational study, a Pilot Study in character, carried out from April 28 to May 28, 2020, to outline the profile of individuals involved in the propagation of fake news, as well as to classify the content of misinformation contained in the messages received. A convenience sampling was carried out, consisting of 22 components of the research project on health promotion strategies at a University Center in the Federal District-Brazil. The components belonged to the Nursing, Pharmacy, Physiotherapy, and Dentistry courses.

Regarding data collection, messages were received on WhatsApp social media by people belonging to the social circle of the researchers involved, and their identification as fake news was carried out manually. In all, the project components had a total of 4,411 contacts, with 250 groups being followed within the application and classified into 20 family groups, 114 friends/diverse groups, and 116 professional groups. The identification and confirmation of the information received as fake news was carried out through the analysis of a specialist and the use of fact-checking sites “aos fatos” and “a Lupa” belonging to the International Fact-Checking Network (IFCN). With the scope of protecting participants' anonymity, no records were stored that could identify them.

Regarding the content, the fake news was classified, according to Wardle and Derakhshan (2017), by type: Content Manipulation, Manufactured Content, False Connection, False Context, Deceptive Content, Satire or Parody and Impostor Content. On a continuous basis, they were quantified using descriptive statistics, to

make known the types of fake news most prevalent in the participants' social network. The subsets were organized and analyzed, according to the keywords by subject and keywords that pointed to the false news, for better dissociation of the content and, subsequently, grouped according to the order of prevalence that indicated which terms were more frequent in the collection period.

The notes of the messages received as fake news were recorded in a provisional table in Excel, with the organization of qualitative variables of the content of the message and the sender, in the collected data were inserted: gender, age, profession, education level, type of relationship (friend, family, acquaintance and stranger), whether received privately or in WhatsApp groups, the type of message (video, text, audio, print, and photo), the theme of the news and its main subject, considering that most were about COVID-19.

In the organization of the data, the non-receipt of fake news should be recorded, in order not to change the search result. The fake news collected were inserted into a WhatsApp group, created to transfer the information to the definitive spreadsheet, resulting in a number with the total information presented during this period.

For statistical analyses, the Minitab program (2020) was used to verify the association between sociodemographic aspects and the sharing of fake news; on the other hand, for the comparison between the types of content of the fake news, the chi-squared test was used, being considered significant, where $P < 0.05$.

Results/Discussion

The present study recorded 31 messages that were proven to be false, considering that the participants are students in the health area, it is understood that there may be a relationship with the small amount of news received. According to Lavorgna et al., (2018), health care individuals tend to curb and contain the spread of fake news when it is identified.

The distribution of fake news by sociodemographic characteristics was as follows: most of the sharers, 52%, were male, while 48% were female (TABLE 1), however, according to Shu et al., (2018), female individuals are more likely to trust false news than male individuals. Although there is a difference in the percentage of gender, what can be inferred is that the results of the present study resemble those of the current literature.

Table 1. Sociodemographic variables related to the sharing of fake news in the WhatsApp application.

Sex	N	%
Male	16	52.00
Feminine	15	48.00
Age	N	%
60 ou +	8	26.00
40-49 years	7	23.00
30-39 years	6	19.00
50-59	5	16.00
Not identified	3	10.00
20-29 years	2	6.00
Up until 19 years	0	0,00
Education	N	%
Incomplete Elementary School	1	3.00
Complete Higher Education	9	29.00
Complete High School	8	26.00
Unknown this information	8	26.00
Incomplete Higher Education	3	10.00
Complete Primary Education	2	6.00
Incomplete High School	0	0,00
Relationship Category	N	%
Family	19	61.00
Friend	5	16.00

Known	4	13.00
Unknown	3	10.00

Regarding age, the predominant group, 26%, was people aged 60 years or older, 23% for individuals aged 40-49 years and 19% people aged 30-39 years (TABLE 1), a similar profile reported by Manso et al., (2019), in which people aged 60 years or older tend to share more fake news, because they have less ability to discern what are facts and what are false news, so they share up to seven times more than people from other age groups.

Considering education, it was observed that 29% were people with complete higher education, 26% were people with completed high school, and it was not possible to identify this information in 26% of the cases (TABLE 1). Analyzing the study by Jones-Jang et al., (2019), it appears that users with higher education are better able to recognize and refute false news. Considering the profile of the research components, it was observed that because the researchers are inserted in the academic environment, the relationship with this social circle may have interfered with the results obtained. It is known that the environment in which the individual is inserted influences his niche of interpersonal relationships.

Still, on the level of education, the study by Morais and Sobral (2020), showed that most students are aware of what fake news is, of the negative impact of the phenomenon and that most students have a high level of distrust in the information shared through social networks, thus pointing to education as the best way to reduce the impact of fake news.

Regarding the relationship category of fake news sharers, in 61% of cases, fake news was shared by family members, 16% by friends, 13% by acquaintances, and 10% by strangers (TABLE 1). Considering the study conducted by Resende et al. (2019), it was observed that family groups are responsible for 51% of the sharing of untrue information in Whatsapp media during the presidential campaigns in Brazil in 2018. These findings can be related to the fact that the individual has greater confidence when sending the content of a deceptive content to a family member, due to their degree of proximity, according to Sousa Júnior et al., (2020) this misinformation is called involuntary.

Relating to the types of fake news media, it was found that in 35% of the cases the fake news were in text format, 32% in video, 19% in audio, and 13% were shared through a news photo/print (TABLE 2). Tandoc et al., (2017), state that there is a greater occurrence in the sharing of false information in news/print, given the fact that its falsification has a more common occurrence associated with the use of manipulation software. In reference to the results obtained by Salaverría et al., (2020), false news tends to be more shared in the form of text because it is easy to produce. Generally, at the time of the dissemination of fake news, the text will be associated with the image or a video. According to Matos (2020), fake news in a general context does not tend to be much shared through audio due to higher demand from the receiver. According to Moroni (2018), the high rate of sharing fake news through videos is associated with its ability to impact and generate emotion in the recipient.

About fake news by shared subjects, 77% were content related to health, 19% were involved in politics, and 3% related to beliefs (TABLE 2). According to the study by Salaverría et al., (2020), in which the prevalence of the most recurrent subjects in the sharing of fake news was analyzed, 34.9% of the false news corresponded to the category of Science and Health, 26.7% to the Politics and Government and 38.4% to other matters. It becomes evident that most of the fake news related to Health will be politicized (Salaverría et al., 2020).

Table 2. Themes, content types and media of cataloged fake news.

Fakes news themes	N (%)
Subject of the health	24(77,42)
Policy	6(19,35)
Beliefs	1(3,23)
Content Type	N(%)
Manufactured Content	11(35,00)
Deceptive Content	9(29,00)
Handled Content	6(19,00)
Impostor content	3(10,00)
False Context	2(6,00)
Shared media type	N(%)
Text	11(35,00)
Vídeo	10(32,00)
Áudio	6(19,00)
Photo of the news (print)	4(13,00)

Concerning the classification of the type of content in fake news, 35% were manufactured content; 29% misleading content; 19% manipulated content; 10% imposter content and 6% content with false context (TABLE 2). Salaverría et al., (2020) found results opposite to this study and reported that fake news of the impostor content type were more prevalent.

There was no association between sociodemographic aspects and the sharing of fake news by the chi-square test. When using the classification of content types and sociodemographic variables, gender ($p=0.457$), age ($p=0.508$), schooling ($p=0.616$) and relationship type ($p= 0.331$) there were no significant differences (TABLE 3). Similar results were found in the study by Yamaguchi et al., (2020) in which they highlighted that, in regards to interpretation, evaluation and use of health information in digital media, the variables sex and age were not associated with the sharing of fake news, different from the education variable, which was significant.

When comparing the classification of content types, it was found that the manipulated content, deceptive content, and impostor content did not show differences in their frequencies. However, the fabricated content and false context stood out as the most shared ($p = 0.033$). Similarly, a study by Ferreira (2018) that analyzed the content on the web, reveals that the main contents, the “false context” and the “fabricated content”, are the most motivating for propagation (TABLE 3).

Table 3. Results of the Chi-square test for the association between qualitative variables and classification of fakes news; content types and classification and association between content type and media.

Answer	Factor	P value
Sex	Classification	0,457
Age	Classification	0,508
Scholarity	Classification	0,616
Relationship Type	Classification	0,331
Handled Content	Classification	> 0,05
Manufactured Content	Classification	0,033*
False Context	Classification	0,033*
Deceptive Content	Classification	> 0,05
Text	Media	> 0,05
Video	Media	> 0,05
Áudio	Media	> 0,05
Photo of the news (print)	Media	> 0,05

* - Test Qui² (p<0,05)

There was no association between the type of shared media and gender, age, schooling, and relationship types (p>0.05); as well as the types of media: text, video, audio, and photo of the news (print) (p>0.05). It should be noted that although there is no statistical association in this study, sociodemographic factors may influence the sharing of fake news, it is understood that these factors are characterized as social determinants of health, so they condition the spread of fake news(Yamaguchi et al., 2020; Guntzviller et al., 2016) (TABLE 3).

Conclusions

The dissemination of fake news has several variables, being dependent on a medium in which to propagate itself. The most common means of sharing nowadays is the WhatsApp message sharing network, being the favorite among fake news spreaders because of its accessibility and easy use.

After the analysis of the results of the present study, it is inferred the need to deepen investigations in this subject, to demonstrate that sociodemographic factors can influence the sharing of news without factual, true, content. In this context, health professionals can collaborate as part of a process aimed at combating this problem of spreading fake news in an international emergency moment in the face of the COVID-19 pandemic.

It is noteworthy that, with respect to the fight against fake news, there is a strong need to improve the continuing education of these professionals, to curb the spread in the environment in which it is inserted. Therefore, for future studies, it is suggested to characterize whether the fake news was shared in groups or individually on the WhatsApp message sharing network to deepen the profile of the dissemination of such news in this application, which can contribute to the improvement and decrease the dissemination of false news, especially in health in times of pandemic and other topics of social importance.

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Authors' contributions

Oliveira, T.R.S worked on the design of the study. Oliveira, E.M, Pinheiro, Araújo, Souza, Campos and Freitas worked in data collection, organization of information and elaboration of results and discussion. Lima, Ferreira, Toledo, and Souza participated in the data collection and elaboration of the text. Oliveira, T.R.S and Barbosa deepened the discussion and made final revisions in the body of the text.

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