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Health-Related Fake News. Case Study: Online Health Information Seeking and Sharing Behavior on Social Media among Romanian Retirees Aged 50+ during the COVID-19 Pandemic

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SUMMARY

Introduction

The fake news phenomenon has come to the attention of the public due to the 2016 U.S. presidential elections (Zhang & Ghorbani, 2019) and of the Brexit campaign (Bârgăoanu, 2018). Fake news and false information have always been present within society, yet technological development and social media platforms provide the perfect ground for producing and spreading fake news. Therefore, scholars argue that disinformation is a large-scale phenomenon (Balaban, 2019; Bârgăoanu, 2018).

Over the last years, social scientists and – in particular – communication researchers have developed robust scholarship on the phenomenon of disinformation and fake news, not only tapping into international contexts or foreign countries' situations (e.g. Allcott & Gentzkow, 2017; Bakir & McStay, 2018; Harsin, 2018; Lazer et al., 2018; Tandoc et al., 2017; Wardle & Derakhshan, 2017; Zhang & Ghorbani, 2019), but also in Romania (Oprea, 2021; Bârgăoanu, 2018; Bârgăoanu & Radu, 2018; Bârgăoanu et al., 2021; Buturoiu et al., 2017; Corbu, Boțan, Buturoiu, & Dumitrache, 2020; Corbu, Oprea, Negrea-Busuioc, & Radu, 2020; Corbu et al., 2021; Durach et al., 2020; Durach et al., 2022; Fârte & Obadă, 2021; Ștefăniță et al., 2018). Before the outbreak of the COVID-19 pandemic, most research tackling this topic documented the impact of fake news upon political communication, especially during election campaigns. The COVID-19 pandemic was a turning point for switching researchers' attention to health-related fake news (Melchior & Oliveira, 2021) and its impact upon health-related decisions. Moreover, the COVID-19 pandemic proved to be a breeding ground for fake news and its dissemination, especially on social media (Ali, 2020; Kouzy et al., 2020; Pennycook et al., 2020).

What needs to be stressed at this point is that the fake news phenomenon is tremendously vast and complex, since fake news generates an impact upon many fields. But if scientific literature on the phenomenon of disinformation and fake news is so rich, then why would another study be needed? This would certainly be a legitimate question. However, the present study addresses a research gap. The study was conducted in Romania, and the age group under investigation constitutes a particularly relevant group in the context of the COVID-19 pandemic, as we are talking about people who have a certain vulnerability to the disease, according to medical evidence. Therefore, this thesis focused only on a very particular section of this phenomenon, namely health-related fake news distributed in social media during the COVID-19 pandemic. The present research focused on online health information seeking and

sharing behavior among retirees aged 50+, from the age group of 50-years-old and above, who are also retirees, during the COVID-19 pandemic. The decision to focus on this age group, combined with their professional status, and to analyze their attitudes and behaviors related to fake news assumes that retirees aged 50+ are more vulnerable when it comes to online fake news (Buchanan, 2020; Chiang & Jackson, 2013). The thesis has an exploratory nature and aims to shed light on how the above-mentioned group engage with social media posts containing COVID-19-related fake news. Furthermore, this thesis looks at the informational characteristics of Facebook posts featuring COVID-19 fake news. Even though there are previous studies focusing on digital behavior in Romania, there is still limited scholarship focusing on retired individuals aged 50+ (Marinescu, 2020). What is more, to our knowledge, there are no studies conducted in Romania on this age group and their attitudes and behaviors related to fake news, and in particular to COVID-19-related fake news. This topic is important because this group ranked high among vulnerable groups in the named pandemic, thus the effects of engaging with disinformation could have had important consequences on their personal health and well-being.

This study fills a gap in the national specialized literature on health information seeking and sharing behavior among retirees aged 50+ during health crises situations. Moreover, this research is relevant and serviceable to health communication professionals; when developing health information campaigns, they need to consider analyzing the behavior of the audiences they are targeting.

The main objectives of the present thesis are the following:
1. *To explore how retirees 50 years old and above who are social media users seek and find health information online during health crises such as the COVID-19 pandemic;*
2. *To identify informational characteristics of Facebook posts containing COVID-19-related fake news that were shared on Facebook groups dedicated to retirees;*
3. *To explore how social media users from the age group 50+ present on dedicated Facebook groups engage with COVID-19-related fake news.*

Theoretical framework of the study

In the first chapter, the context and the problem statement were discussed. In this chapter, we explored the digitalization of the contemporary society, the development of social media platforms, and the impact of these latter on spreading false information over the Internet. We also discussed the proliferation of fake news in the health field. In tackling this topic, we mapped several issues from the health field that are affected by fake news dissemination:

vaccination, reproductive health, or cancer. Additionally, in the last part of this chapter we talked about the dissemination of fake news during the COVID-19 pandemic. Here, we argued that a lot of false information (i.e., information about miraculous cures for COVID-19) and conspiracy theories (i.e., conspiracy theories regarding the origins of the virus or regarding the connection between 5G networks and COVID-19) emerged and spun on social media during this health crisis.

False information scholars claim that we live in the post-truth era (Anderson & Sulistyani, 2019), dominated by technological revolutions (Bârgăoanu, 2018) and fake news (Anderson & Sulistyani, 2019). Technological developments have brought along the evolution of social media platforms, which facilitate the diffusion of false information (Tandoc, Jenkins, & Craft, 2019). The Internet is an uncontrollable environment, available to a wide audience, thus making the perfect place for spreading rumors and false information (Jost, Pünder, & Schulze-Lohoff, 2020). Scholars have thus focused their research on analyzing fake news. Some note that sharing fake news on social media can have serious consequences for individuals, organizations, or even whole countries (Corbu, Oprea, Negrea-Busuioc & Radu, 2020). Further, the fake news phenomenon also affects the medical sector (Robledo & Jankovic, 2017; Lazer et al., 2018), since fake news related to multiple health topics are spread all over the Internet (O'Connor, 2019). People often engage in online searches for treatment alternatives for different diseases (Keselman et al., 2019), even though making health decisions based on inaccurate health information they find online can have negative consequences for their health status (Sun et al., 2019).

Most health-related fake news emerges in social media during health crisis situations (Zhang & Zhou, 2018). Thus, the COVID-19 pandemic shifted researchers' attention towards health-related fake news. During the pandemic, a lot of COVID-19-related false information was spread on social media (Constantinou, Kagialis, & Karekla, 2020); the social media landscape from all over the world was bombarded with fake news about miraculous cures for COVID-19, stories regarding the origins of the virus, or conspiracy theories regarding the measures taken by the national authorities against the pandemic (Linden, Roozenbeek, & Compton, 2020; Pennycook et al., 2020; Shahsavari et al., 2020).

Nevertheless, even though scientists are beginning to signal the risks of seeking health information online, health-related false information continues to invade social media platforms.

The second chapter thoroughly explored the complex concept of fake news. False information has always been a part of our society, and in this context, Wardle & Derakhshan (2017) argued that false information can be classified into three categories: disinformation,

misinformation, and malinformation. Also, in the context of the information disorder, researchers also discuss conspiracy theories (McKenzie-McHarg, 2020; Pierre, 2020; Sunstein & Vermuele, 2009) and fake news. We started this chapter by reviewing conspiracy theories and the information disorder within today's society. Then, based on previous literature, we defined and characterized *disinformation*, *misinformation*, and *malinformation*, and the fake news concept and typologies (Tandoc et al., 2017; Vasu et al., 2018). We here reviewed several fake news definitions framed in previous literature (Bakir & McStay, 2018; Lazer et al., 2018; Zhang & Ghorbani, 2019). Trying to define the fake news concept, researchers pointed out the difficulty of finding a definition for this term, since the fake news concept is complex, vague, and incomplete (Bârgăoanu & Radu, 2018; Corbu, Oprea, Negrea-Busuioc, & Radu, 2020; Marwick, 2018). However, most scientists agree with the definition according to which fake news is fabricated information created for financial or ideological motives and disseminated on the Internet with the aim of misleading readers (Allcot & Gentzkow, 2017; Colliander, 2019; Duffy et al., 2019; Lazer et al., 2018; Mosinzova et al., 2019; Rochlin, 2017; Tandoc et al., 2019; Zhang & Ghorbani, 2019). Furthermore, we discussed political satire, rumors, news parodies, political propaganda, and photo manipulation in relationship to fake news (Duffy et al., 2019). *Deepfakes*, another type of fake news created through artificial intelligence, are presented here. Also, this section maps for spreading fake news and disinformation (i.e., selective censorship, manipulation of search algorithms so that news is more likely to appear on a Google search, hacking sensitive and confidential information, and using bots and trolls to distribute fake content on social platforms) and the sources of fake news (Tandoc et al., 2017, Tucker et al., 2018; Vasu et al., 2018; Verstraete et al., 2017).

Additionally, after defining and conceptualizing fake news, researchers tried to understand the reasons why people believe and share false information online. Hence, scientists claim that there are many variables influencing beliefs in fake news, such as the level of education (Georgiou et al., 2020), psychological reasons (Butter & Knight, 2020; Douglas et al., 2017), perceived danger (Kim & Kim, 2020), previous beliefs that are consistent with the false information they read online (Buchanan, 2020), intense emotions of fear and uncertainty felt during distressful events (Butter & Knight, 2020; Prooijen et al., 2020), or the individuals' level of trust in news distributed on social media (Laato et al., 2020).

Furthermore, the chapter documents ways to combat this phenomenon, based on relevance and effectiveness of online fact-checking platforms, and the necessity of developing and implementing policies for fighting online disinformation. The most important aspect that needs to be considered here is the fact that, even though solutions to tackle the spread of fake

news and health-related fake news (i.e., fact-checking platforms, improving people's media literacy, or measures instituted by social media platforms to fight false information) are being developed at a global level (Bârgăoanu & Radu, 2018; Clayton et al., 2019; Corbu, Oprea, Negrea-Busuioc, & Radu, 2020; Pulido et al., 2020; Vargo et al., 2018), countering fake news can really be challenging (Zhang & Ghorbani, 2019).

The Internet has changed the way in which people receive news and social media platforms have impacted individuals' everyday life (Dentzel, 2013), which constitutes the focus of the third chapter. This section discussed the *platformization* (Van Dijck et al., 2018) of today's society and the main social media channels used in Romania: Facebook, WhatsApp, and YouTube (Constantinou et al. 2020; Davies, 2020). Each of these social media platforms are analyzed in terms of users, features, affordances, and usage. Due to their nature, however, social media platforms facilitate the spread of false information (Tandoc, Lim, & Ling, 2017; Zhang & Ghorbani, 2019). The COVID-19 pandemic constituted the perfect ground for spreading fake news on social media (Ali, 2020; Kouzy et al., 2020; Pennycook et al., 2020).

The next chapter develops the theoretical framework of the present work by elaborating on fake news in health communication. Topical concepts such as health information, online health information seeking behavior, literacy and health literacy, and eHealth literacy are discussed. The risks associated with searching for health information online are highlighted in this chapter, while taking a closer look into fake news dissemination during COVID-19. The progress of the Internet and social media platforms impacted some health-related practices, such as searching for health information (Park et al., 2019; Stellefson et al., 2018). Today, searching for health information online is a usual activity (Eysenbach, 2008). It has become easier to search for health information online, rather than spend time in medical offices (Baker & Watson, 2020). However, even though online health information is quick and easy to access, many individuals are not able to interpret and properly use the health information they find online (Alhuwail & Abdulsalam, 2019). The eHealth literacy level influences the individuals' abilities to interpret and properly use the health information they find online (Eysenbach, 2001; Paige, et al., 2017). eHealth literacy refers to the capacity to look for health information using electronic devices and applications, obtain, understand, and review it, and further use this information to tackle and answer to their health issues (Norman & Skinner, 2006b).

Hence, even though fake news first impacted the political field, the health sector has also become a target. False information on different health-related topics such as cancer, epidemics, healthy lifestyle, or medicines is disseminated all over the Internet (Krishna & Thompson, 2019). Even though there are many trustworthy health platforms on which people

can access reliable health information, such as WHO, Healthfinder, or MedlinePlus, people who face a certain health problem use Google to search for information on their health issue, instead of going directly on the reliable health website (Eysenbach, 2008).

Regarding sources of health-related fake news, studies show that there are many actors involved in spreading health-related fake news: bots, trolls, echo chambers, or the algorithms of social media platforms (Chou et al., 2018; Jamison et al., 2019; Sindermann et al., 2020; Shu et al., 2020). Nevertheless, most researchers claim that health-related fake news emerge in social media during distressful events such as health crisis situations (Zhang & Zhou, 2018). For instance, the COVID-19 pandemic provided the perfect occasion for spreading health-related fake news on digital platforms (Kouzy et al., 2020; Mian & Khan, 2020; Ali, 2020; Pennycook et al., 2020; Bangani, 2021). Scientists outlined that social media was flooded with false narratives about the origins of the virus, the connection between 5G networks, and the spread of the virus, or about the COVID-19 vaccine (Bertin et al., 2020; Bruns et al., 2020, Jolley & Paterson, 2020; Obiala et al., 2021; Papakyriakopoulos et al., 2020; Shahsavari et al., 2020; Sederholm, Jääskeläinen, & Huhtinen, 2021; Gagliardone et al., 2021; Daradkeh, 2022). All these false stories were span on social media networks like Facebook, YouTube, WhatsApp, or Twitter (Atehortua & Patino, 2021). Moreover, the COVID-19 pandemic had a great impact on retirees aged 50+ and influenced their feelings and behavior (Lekamwasam & Lekamwasam, 2020; Qiu et al., 2021; Sykes et al., 2021; Wong et al., 2021).

In terms of the impact of health-related false information upon public and personal health, researchers agree that health-related false information seriously influence public health, due to the overwhelming fake news regarding vaccination or outbreaks on social media (Qiu et al., 2018). Also, health-related fake news can cause harm in terms of personal health decisions (Schwitzer, 2017; Lee & Tak, 2022). Health-related fake news has been approached by many scientists, and their studies concluded that it constitutes a global public health problem (Bauchner, 2019; Carrieri et al., 2019; Dhoju et al., 2019; Gorski, 2019; Keselman et al., 2019; Melchior & Oliveira, 2021; Waszak et al., 2018).

The fifth chapter analyzes motives for spreading fake news online, particularly looking at rationales behind retirees' aged 50+ behavior of sharing such content on social media. Previous studies featured financial, political, and ideological motives, as well as psychological reasons involved in disseminating fake news online (Apuke & Omar, 2020). In terms of portraying the kind of people who share false information online, studies showed that retirees aged 50+ and people with a low level of digital media literacy are more likely to disseminate false information on the Internet (Buchanan, 2020; Pehlivanoglu et al., 2022). However, there

is little knowledge about people's motives for sharing false information on social media (Chadwick & Vaccari, 2019), and thus researchers must focus their undertakings on this specific issue.

The final theoretical chapter discusses the theoretical models from the literature that can explain the online health information-seeking behavior, the fake news dissemination behavior, or other health-related behaviors: the Channel Complementary Theory (Dutta-Bergman, 2004; 2006), the Social-Mediated Crisis Communication Model (Austin & Jin, 2016), the Health Belief Model (Janz & Becker, 1984), Longo's Expanded Model of Health Information Seeking Behavior (Lalazaryan & Zare-Farashbandi, 2014; Longo et al., 2009; Longo et al., 2010), the Source Credibility Theory (Hovland et al., 1953), and the Elaboration Likelihood Model (Petty & Cacioppo, 1986b). The online health information-seeking behavior among retirees aged 50+ during the COVID-19 pandemic in Romania can be explained using these models. During health crisis situations, such as the COVID-19 pandemic, people read health information from various sources, either credible or not, and assessing the quality, credibility, and reliability of the health information they read online is very important for making certain health decisions like deciding to get vaccinated against COVID-19 or not.

Methodology

Further on, the seventh chapter describes the methodology employed in carrying out this research. The research design is thoroughly discussed. The present study engaged a mixed-methods approach, applying both qualitative and quantitative methods, due to the complexity of the fake news phenomenon (Chelcea, 2022). More specifically, a survey, several in-depth interviews, and a content analysis of social media communication were conducted. By using a mixed-methods approach, we aimed at exploring how retirees aged 50+ who are social media users seek, find, and engage with health information retrieved online, in the context of the COVID-19 pandemic. Moreover, we analyzed informational characteristics of Facebook posts containing COVID-19-related fake news that were shared on the public Facebook group "*Pensionari din Romania" (*Eng. *Retirees from Romania)* and how the members of this Facebook group engaged with the COVID-19-related fake news content shared on the group.

Even though in Romania the standard retirement age is 61 years old for women and 65 years old for men, the sample includes early retirees on health grounds (ill-health retirees) aged 50 and above. The study sheds light on the way in which retirees interact with news about the COVID-19 pandemic distributed on social media, and especially on WhatsApp and Facebook. During the time frame of the present research, COVID-19 cases were diagnosed in Romania,

protective measures within the state of emergency were implemented, and later COVID-19 vaccines were distributed, thus setting in motion vaccination campaign. The study focused on WhatsApp and Facebook use because they are popular among the age group under analysis and, moreover, prior research showed that these social media platforms were the main channels for distributing false information (Ali, 2020; Kouzy et al., 2020; Linden et al., 2020; Pennycook et al., 2020; Zhang & Ghorbani, 2019; Tandoc et al., 2019).

Table 7.1.

Summary of the Methodology

Method	Research questions addressed and/ or hypotheses tested	Sample and time frame of data collection
Survey	**RQ1. How do retirees of 50 years old and above, who are social media users, seek, find, and share health information online, during the COVID-19 pandemic?** *H1. The higher the perceived health vulnerability of a person in terms of the COVID-19 pandemic, the higher the interest in health information on a) social media and b) on traditional media;* *H2. Health information sharing behavior on WhatsApp is influenced by a) perceived information usefulness, b) perceived information importance, c) education, d) e-health literacy, and e) interest in health information on social media;* *H3. The level of trust in the ability to recognize fake news is influenced by a) the frequency of encountering fake news and by b) the level of trust in health information delivered by Facebook and c) WhatsApp;* *H4. The level of trust in the ability to recognize fake news influences health information sharing behavior on WhatsApp.*	*N = 104* (age 50 to 80 years old) March-April 2020 October 2020
In-depth interviews	**RQ1. How do retirees of 50 years old and above, who are social media users, seek, find, and share health information online, during the COVID-19 pandemic?**	*N = 21* (age 52 to 89 years old) January-February 2021
Content analysis	**RQ2. What are the informational characteristics of Facebook posts containing COVID-19-related fake news that were shared on the Facebook group *Pensionari din Romania* (*Retirees from Romania*) between February 26, 2020, and July 26, 2021?**	*N=25* most shared Facebook posts containing COVID-19-related fake news which were shared on

	RQ3. How do retirees aged 50+ in the Facebook group *Pensionari din Romania* **(Retirees from Romania) engage with content featuring COVID-19-related fake news posted on the group?**	the Facebook group *Pensionari din Romania* February 26, 2020 - July 26, 2021

Results

Results are discussed in the following three chapters in a comprehensive manner.

Survey Results

The findings from the survey showed that Romanian retirees aged 50+ use Facebook and WhatsApp frequently. Also, respondents showed relatively high levels of the intensity of Facebook and WhatsApp use. This means that they like using both Facebook and WhatsApp. However, among the sample, there was a higher interest in health information from Facebook compared to the interest in health information from WhatsApp. This shows that respondents may perceive health information on Facebook as more credible or more complex than health information on WhatsApp.

Moreover, survey results pointed out that, for retirees aged 50+, the credibility of the source and the credibility of the message are important when they consider sharing information on WhatsApp. What is more, most of the sample perceives the information received on Facebook as being more useful and more important than the information received on WhatsApp. This shows that, for Romanian retirees aged 50+, Facebook is a more reliable and useful source of information. These results are consistent with the Source Credibility Theory, according to which people are more easily influenced by messages coming from a source that is perceived as credible (Fogg, 2003; Hovland et al., 1953; Umeogu, 2012). Moreover, based on the Elaboration Likelihood Model (Petty & Cacioppo, 1986b), source credibility might also influence the way in which people process information (Griffith et al., 2018).

There was a relatively high level of health vulnerability among the sample. Respondents feel vulnerable against the threats of the COVID-19 pandemic. This vulnerability might be explained by the fact that they may have comorbidities, thus being more at risk of developing a severe form of COVID-19.

The average total score of the eHEALS among our analyzed sample was M=41.47, thus illustrating a relatively high level of eHealth literacy among Romanian retirees aged 50+. This shows that Romanian retirees aged 50+ are relatively confident in searching, finding, and using health information on the Internet. However, an information campaign meant for educating them to seek, find, and use health information over the internet could have a great impact in

Romania, especially in the rural areas. These results are consistent with the results from previous studies measuring health literacy. For instance, Coman et al. (2022) measured the health literacy level in Romania and concluded that most of their sample had a sufficient level of health literacy. However, these studies did not use the same measuring instrument as the one used in our study. For this paper, the eHEALS scale (Norman & Skinner, 2006a) was used. Nevertheless, other studies using the eHEALS scale (Norman & Skinner, 2006a) for measuring eHealth literacy reached similar conclusions to ours. For example, Chung and Nahm (2015) measured the eHealth literacy level among retirees aged 50+ and concluded that there was a relatively high level of eHealth literacy among the analyzed sample. Similar results were found in other studies (Dale et al., 2020).

Considering that there was a relatively high level of eHealth literacy among retirees aged 50+ in Romania, based on previous studies (Chiang & Jackson, 2013), we might argue that retirees aged 50+ in Romania analyze information rationally. Based on the Elaboration Likelihood Model (Petty & Cacioppo, 1986b), an individual's eHealth literacy level might influence the processing route for information processing, people with a high level of eHealth literacy could thus process information rationally, using the central route to persuasion (Chiang & Jackson, 2013). According to this theoretical model, individuals can assess a specific message using two paths: the central route and the peripheral route. The central route involves cognitive effort and critical thinking on the message, while the peripheral route implies a reduced mental effort, individuals forming their opinions based on factors that are not related to the message itself and using heuristics (Bhattacherjee & Sanford, 2006; O'Keefe, 2002; Osatuyi & Hughes, 2018; Petty & Cacioppo, 1986a, 1986b).

Furthermore, results showed a high level of trust in the ability to recognize fake news among the analyzed sample. Hence, respondents are confident in their ability to identify fake news. Also, results showed that the frequency of encountering fake news on social media was high among the studied sample. Previous studies showed that during the COVID-19 pandemic, social media was bombarded with fake and misleading information (Al-Zaman, 2021; Fernández-Torres, Almansa-Martínez, & Chamizo-Sánchez, 2021; Moscadelli et al., 2020; Nayar et al., 2020). These results are also consistent with the results obtained from the interviews.

There was a high level of trust in health information on Facebook and a high level of trust in health information on WhatsApp. However, the level of trust in health information on Facebook was slightly higher than the level of trust in health information on WhatsApp. These

results stand in contrast with previous research showing that retirees aged 50+ do not perceive social media as a trustworthy source of information during the pandemic (Sykes et al., 2021). However, even though there was a relatively high level of eHealth literacy among the analyzed sample, these results are consistent with the results from other studies which proved that retirees aged 50+ with a low eHealth literacy level have a high level of trust in health information on Facebook (Paige et al., 2017). Also, consistent with the Source Credibility Theory (Hovland et al., 1953), trustworthiness is one of the main elements that influences the credibility of the source, thus retirees aged 50+ who exhibit more trust in health information from Facebook will be more easily persuaded by messages on Facebook.

Results also showed that a person's high level of perceived health vulnerability in the COVID-19 pandemic will partially determine a high interest in health information on social media. This was an expected result since someone with a health problem will be more interested in reading health information from all available channels. So, consistent with previous research (Baker & Watson, 2020; Buchanan, 2020; Eysenbach, 2008; Pulido et al., 2020) and with Longo's expanded model of health information seeking behavior (Lalazaryan & Zare-Farashbandi, 2014; Longo et al., 2010), the results of this study showed that the health status of retirees has a certain influence upon the online health information seeking behavior. What is more, our results pointed out that women tend to have higher interest in health information on social media.

Furthermore, consistent with previous research (Cao et al., 2016; Li, Theng, & Foo, 2016), results showed that health information sharing behavior on WhatsApp is influenced by education, eHealth literacy, and interest in health information on social media. This might indicate that retirees aged 50+ with a high level of eHealth literacy, a high level of education, and a high interest in health information on social media will be more careful when selecting the health information that they will share on WhatsApp. Also, the results of the linear regressions showed that the level of trust in the ability to recognize fake news is influenced by the level of trust in health information delivered by Facebook. Additionally, the level of trust in the ability to recognize fake news partially influences the health information sharing behavior on WhatsApp. This might indicate that individuals with a high level of trust in the capacity to recognize fake news might share health information on WhatsApp more often.

Previous research (Lam & Lam, 2012) demonstrated that online health information seeking behavior is associated with health literacy and that this association is mediated by the educational level of the elderly. Thus, even though we analyzed the eHealth literacy level and

the health information sharing behavior on WhatsApp, the results of our inquiry are in line with previous studies (Lam & Lam, 2012). In our case, results showed that health information sharing behavior on WhatsApp is influenced by education, eHealth literacy, and interest in health information on social media.

In-depth interviews results

The in-depth interviews results showed that Romanian retirees aged 50+ prefer to read health information from various sources, such as television, websites, social media, or family members. These results are consistent with previous findings, since they also concluded that retirees aged 50+ acquire health information from TV, the Internet, family members, friends, and healthcare professionals (Agyemang-Duah et al., 2020; Wu & Li, 2016; Niemelä, Huotari & Kortelainen, 2012; Weber et al., 2020). Also, consistent with previous studies (Hesse et al., 2005; Lee, Choi & Noh, 2016; Marinescu, 2020), retirees aged 50+ consider that the doctor's advice should prevail over the treatment alternatives they find online. Thus, they exhibit more trust in the health information from their doctor, rather than the health information they read online (Marinescu, 2020). Our results are in accordance with the results from previous studies (Agyemang-Duah et al., 2020; Chaudhuri et al., 2014; Wu & Li, 2016; Magsamen-Conrad et al., 2019; Marinescu, 2020; Niemelä et al., 2012; Pálsdóttir, 2012; Weber et al., 2020).

Moreover, consistent with previous research (Baker & Watson, 2020; Buchanan, 2020; Eysenbach, 2008; Reddick, 2009) and with Longo's expanded model of health information seeking behavior (Lalazaryan & Zare-Farashbandi, 2014; Longo et al., 2010), and in accordance with survey results, the interview results showed that the health status of retirees aged 50+ weighs upon the frequency of online health information-seeking behavior to some extent. Older participants who mentioned facing a health problem claimed that they engage in online health information-seeking behavior increasingly, since they resort to online resources to look for various treatments for their health condition or for information about the medical system in their area, such as information about clinics, hospitals, or doctors.

Also, our findings showed that Romanian retirees aged 50+ from Romania perceive themselves as being capable of searching and finding health information on the Internet, yet despite this, some of them read and implement health tips and remedies found on unreliable websites or blogs. This may be a result of being constantly exposed to false information on social media, and thus tend to believe it, which is called the illusion of truth (Van den Broucke, 2020). What is more, their views of seeking health information online during health crises are positive; most interviewees exhibited positive attitudes towards using WhatsApp and Facebook

to stay informed during health crises, even though they claimed not completely trusting health information received here, due to being receivers of false information.

Views on the COVID-19 vaccine were mixed; some viewed it positively, others claimed not having enough information to form an opinion. Consistent with the results from previous studies (Saied et al., 2021), the barriers associated with vaccination hesitancy among retirees aged 50+ were insufficient information about the vaccine and fear of adverse effects. However, most declared willing to get the vaccine, which is consistent with previous studies (Al-Mohaithef & Padhi, 2020). We observed that women were more prone to believe in false information spread on social media and declared more trust in health information read on unreliable websites, which could be explained by spending more time on WhatsApp and Facebook.

Content Analysis Results

Table 10.1

Summary of the Findings for the Content Analysis

Category	Subcategories	Number of posts	Comments
Post date	the date on which the information was posted in the Facebook Group	N=22 posts were from 2020 N=3 posts from 2021	Time frame of the analysis: March 8th, 2020 - January 9th, 2021
Type of content	photo, photo and link, photo and text, photo and text and link, link, text, text and link	N=10 posts contained links with COVID-19-related fake news N=7 posts contained photos and text N=4 posts contained photos and links N=3 posts included photos, text and links N=1 post contained only text N=0 posts which contained only photos or posts which contained text and links.	
Share link	the link of the articles shared in the Facebook post	N=8 posts contained information about the origin of the virus and the conspiracy theories related to the virus	the content of these links varied Not all posts contained links

		N=3 posts contained information about treatment alternatives and miracle cures for COVID-19 N=1 post contained information about various prophecies issued by celebrity non experts, N=2 posts contained information about the adverse effects of the coronavirus vaccine	
Number of total interactions		The number of total interactions of the Facebook posts ranged from 21 to 3200 interactions, with the highest number of total interactions for the Facebook posts containing information about the people involved in the fight against the pandemic	
Number of likes		The number of likes of the Facebook posts ranged from 19 to 2800 likes (e.g., of most influential posts were presented above)	
Number of shares		The total number of shares ranged from 1 to 553 shares	
Number of comments		The number of comments ranged from 1 to 901, with the highest number of comments for the Facebook posts containing information about the people involved in the fight against the pandemic.	
Topic of the post	The origin of the virus, cure, vaccine, who is fighting against the virus	N=13 posts information about the origin of the virus N=6 posts vaccine N=3 posts cure options N=3 posts who is fighting against the virus	several categories were identified: information about the origin of the virus, information about treatment options, information about the coronavirus vaccine, information about

19

			the people involved in the fight against the virus
Period in which the information was posted on the Facebook group	the period in which the virus appeared, the period in which the vaccine appeared	N=19 posts were published during the first COVID-19 wave N=6 posts were published after vaccination was started in Romania	
Resource type	- news articles from traditional or online established media outlets - other online sources such as blogs, support groups, online communities, social media	N=16 posts from traditional or online established media outlets N=9 posts from other online sources	
Characterization	Parody or satire, imposter content, misleading content, fabricated content, false connection, manipulated or false content	N=14 posts were characterized by misleading content N=8 posts were characterized by fabricated content N=2 posts were characterized by false connection N=1 posts was characterized by satire or parody	
Source of the article	Authorship Expertise of the author(s)	N=3 posts with no author mentioned N=22 post with authorship N=10 posts contained links (dot.ro) N=4 posts contained links (dot.com) N=2 posts contained (dot.net) N= 22 posts containing links from less-credible sources	No mention of the author's profession No indication of the author's expertise The articles from the Facebook posts were published on various websites such as curioase.ro, libertatea.ro, dcnews.ro, infocrestin.com, or ortodoxinfo.net (non-credible sources)

Validity of the content	Citations Transparency of the information sources Reliable information sources	N=8 posts with no citations, even when needed. N= 7 posts quoting medical doctors, even epidemiologists N= 4 posts containing COVID-19-related fake news articles contained endorsements by celebrity non-experts N= 2 Facebook posts containing COVID-19-related fake news articles contained a mention of a secret cure discovered by the author(s)	
Objectivity	Biased content Intention to sell products Call to action or certain behavior	The content of the posts did not appear to be biased N=4 Facebook posts containing COVID-19-related fake news were selling certain products, namely medicines for treating COVID-19, such as Gripovit max C, Hapciu Tea, Kaletra or Tamiflu N=3 Facebook posts containing COVID-19-related fake news encouraged a certain action: 1 encouraged people not to get vaccinated, and 2 posts with fake information encouraged people not to believe in this pandemic and also not to take the severity of the disease seriously.	
Emotional appeal	Testimonials with emotional elements Disturbing pictures Personal anecdotes	N=3 posts included disturbing pictures N=4 posts included personal anecdotes	the emotional appeal dimension was represented in the Facebook posts which included information about the people involved in the fight against the virus

Treatment or prevention measures	Treatment Magical cure	N=5 Facebook posts containing COVID-19-related fake news included some treatment methods for coronavirus. N=3 Facebook posts containing COVID-19-related fake news mentioned vaccination.	
Promises and certainty	Products that assure cure Solutions for recovery	N=3 posts containing claimed of having a product that cures N=3 posts containing mentioned of complete recovery	
Criticism of establishment	Conspiracy theories Critical remarks about governmental institutions Media bias Criticism of biomedical research of COVID-19	N=12 posts containing critical remarks about the government institutions	The posts suggest that there is a conspiracy leaded by government institutions and/ or health officials
Vocabulary	Colloquial language Not evidence based	N=25 posts were written using a simple wording and/or colloquial language	
Scientific argumentation	Biological mechanisms of diseases and treatments Unverifiable statements False claims Exaggerated claims	N=2 posts mentioned biological mechanisms of diseases or treatments N=15 included unverifiable statements N=3 contained false claims N= 4 included exaggerated claims.	

Conclusions, limits and future research perspectives

The final section presents overall conclusions of the research, scientific and practical implications of the study, limitations, and future research perspectives. The theoretical implications were highlighted here together with the practical implications for various actors, such as policy makers and professional communicators involved in health crisis communication and in the management of epidemics and outbreaks.

The **conclusions** section revised the major findings of this study. This exploratory research focused on studying their health information-seeking behavior during health crises such as the COVID-19 pandemic, as well as on assessing how retirees aged 50+ engaged with social media posts featuring COVID-19-related fake news. Moreover, this thesis explored informational characteristics of the most shared Facebook posts featuring COVID-19 fake news, from a well-known Facebook public group.

This research work employed a mixed-methods approach, aiming to shed light on a complex phenomenon such as fake news. Moreover, as the COVID-19 pandemic unfolded, the research was conducted in different time frames and reflected different stages of how people related to health-related information seeking and sharing behavior. The results of the survey conducted during the first and second waves of the COVID-19 pandemic showed that, in terms of online health information-seeking and sharing behavior, retirees aged 50+ were more interested in health information from Facebook and rarely shared health information on WhatsApp. The results highlighted that both the credibility of the source and the credibility of the message are important when they consider sharing information on WhatsApp. Further, they perceived the information received via Facebook as more important and useful than the information received via WhatsApp. Results must be interpreted in the light of the context. During the first months of the pandemic, people were looking for new information from medical scientists who were working on researching COVID-19 and ways to fight it.

Survey results are consistent with the Source Credibility Theory, according to which people are more easily influenced by messages coming from a source perceived as credible (Fogg, 2003; Hovland et al., 1953; Umeogu, 2012). Based on the Elaboration Likelihood Model (Petty & Cacioppo, 1986b), source credibility might also influence the way in which people process information (Griffith et al., 2018). Additionally, results illustrated a higher level of trust in health information from Facebook compared to the level of trust in health information from WhatsApp, and these results are in contrast with previous research which found that retirees aged 50+ do not perceive social media as a trustworthy source of information during the pandemic (Sykes et al., 2021). However, survey results pointed out that among the analyzed sample, there was a high level of trust in their ability to recognize fake news and a significant frequency of encountering fake news on social media. However, these results should be interpreted with caution having in mind previous research that observed the presence of the *third-person effect* (Corbu et al., 2020). Furthermore, the results of the survey showed that there was a high level of health vulnerability in terms of the COVID-19 pandemic and a relatively high level of eHealth literacy. High levels of perceived health vulnerability of a person would

partially determine a high interest in health information on social media. In line with previous research (Cao et al., 2016; Li, Theng, & Foo, 2016), results showed that health information sharing behavior on WhatsApp is influenced by education, eHealth literacy, and interest in health information on social media. Also, the level of trust in the ability to recognize fake news is influenced by the level of trust in health information delivered by Facebook. Additionally, the level of trust in the ability to recognize fake news partially influences the health information sharing behavior on WhatsApp.

In-depth interview results complete survey results, offering a more complex and in-depth perspective on the online health information-seeking behavior among the age group 50+ at a different time of the COVID-19 pandemic, January-February 2021, when the first vaccines were administrated to vulnerable groups, people older than 65 years, and to medical staff. The results from the in-depth interviews showed that people from the target audience from Romania preferred to read health information from various sources, such as television, various websites, social media, or family members. However, retirees aged 50+ interviewed considered that doctors' advice should prevail over treatment alternatives found online. Thus, retirees aged 50+, to a certain extent, have more trust the health information they receive from their doctor rather than the health information they read online (Marinescu, 2020). Our results are in accordance with the results from previous studies (Agyemang-Duah et al., 2020; Chaudhuri et al., 2014; Wu & Li, 2016; Weber et al., 2020; Magsamen-Conrad et al., 2019; Marinescu, 2020; Niemelä et al., 2012; Palsdottir, 2012; Weber et al., 2020). Also, consistent with the results from the survey indicating a high level of eHealth literacy among the sample, interview data showed that Romanian retirees aged 50+ perceived themselves capable of searching and finding health information on the Internet, but despite this, some of them read and implement health tips and remedies read on unreliable websites or blogs. What is more, regarding their opinion toward seeking health information online during health crises, they exhibited a positive attitude. Also, most respondents in the sample displayed positive attitudes towards using WhatsApp and Facebook for keeping informed during health crises, even though they claimed not completely trusting health information received via Facebook or WhatsApp, as they had received plenty of false information here during the COVID-19 pandemic. These results are consistent both with the results from the survey and with previous studies (Al-Zaman, 2021; Fernández-Torres et al., 2021; Moscadelli et al., 2020; Nayar et al., 2020) which demonstrated the massive spread of fake news in social media during the COVID-19 pandemic. Further, results from the in-depth interviews illustrated a high willingness to get vaccinated against

COVID-19 among the interviewed sample, results consistent with previous literature (Al-Mohaithef & Padhi, 2020).

Moreover, we looked at informational characteristics of Facebook posts containing COVID-19-related fake news shared on the Facebook group *Pensionari din Romania*, and how members of the Facebook group engaged with that content. A content analysis of social media communication was thus conducted to answer these two research questions. Results from the content analysis showed that the themes of the analyzed Facebook posts varied depending on the period in which the information was posted on the group. Several categories were identified: information about the origin of the virus, information about treatment options, information about the COVID-19 vaccine, information about the people involved in the fight against the virus. Further, results emphasized that the links of the articles shared in each Facebook post varied, in the sense that some links contained information about the origin of the virus and the conspiracy theories related to the virus, information about treatment alternatives and miracle cures for COVID-19, or information about various prophecies issued by celebrity non-experts, while others contained information about the adverse effects of the COVID-19 vaccine. Further, Facebook posts featuring COVID-19-related fake news from the analyzed corpus contained online press content, were characterized by misleading content and mentioned the author of the information, even though they were not credible, reliable sources. The content of the analyzed Facebook posts was not characterized by validity, and some posts included content that needed to be referenced yet was not. All analyzed Facebook posts were written using a simple, colloquial language. Furthermore, most of the posts included unverifiable claims, some of them included false claims, and some contained exaggerated statements. Moreover, regarding the way in which retirees aged 50+ from the Facebook group *Pensionari din Romania* engaged with these posts, the results showed a higher engagement with posts exhibiting an emotional dimension. On these posts, the number of total interactions, likes, shares, and comments was significantly higher. Also, we found that retirees aged 50+ tended to comment more on information with which they agreed. The whole fake news dissemination phenomenon is extremely vast, complex, and dynamic, and this thesis only focused only on a small part of this phenomenon.

Both theoretical and practical **implications** are discussed in the following section, namely the implications of the study section. In terms of theoretical implications, considering the limited scholarship which focused on this population group and its social media behavior (Marinescu, 2020) and that, to the best of our knowledge, there are no studies conducted in Romania on this age group during the COVID-19 pandemic, this exploratory study fills a gap

in the literature from Romania on health information seeking and sharing behavior among retirees aged 50+ during health crises. Furthermore, regarding the practical implications of the study, it has direct implications for policy makers and people working in public health institutions. Public health officials need to develop effective health information campaigns during health crises such as the COVID-19 pandemic.

Even though we tried to be as thorough as possible concerning the methodological undertaking, this research has certain **limitations**. First, regarding the sample size, the survey included only 104 participants. The statistical analysis also entails some limitations, as running linear regressions with multiple variables on such a small population sample can generate large errors. Also, self-serving bias can influence interviewees on such topics. Moreover, it was difficult to gain access in general to retirees aged 50+ in Romania. On the top of it, conducting social research during the state of emergency and the state of alert instituted in Romania in times of pandemic was a challenge. This might explain the reduced number of respondents for the survey. Moreover, the content analysis had some limitations, such as the non-representativity of the analyzed sample and the subjectivity of the analysis (because the content analysis was conducted by a single coder).

Regarding **future research perspectives** on the topic, further studies should consider analyzing the online health information seeking behavior among a larger representative sample of retirees aged 50+ from Romania during a health crises or different types of crises. Prospective studies should also focus on analyzing the differences between retirees aged 50+ living in rural areas from Romania and those in urban areas in terms of online health information-seeking behavior. In addition, it would be interesting to conduct a larger content analysis study on a larger sample and on multiple Facebook groups with retirees. Moreover, accessing private Facebook or WhatsApp groups of retirees would be beneficial for this kind of content analysis. Future research should also consider analyzing aspects related to social-media usage, health-related information, and well-being of the Romanian population.

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