

Use of Online Social Networks and Mental Health at maturity during the Covid-19 pandemic

Pollyana Ludmilla Batista Pimentel

Josevânia da Silva

Ana Alayde Werba Saldanha

Abstract

The aim of this study was to analyze the impact of the use and non-use of online social networks on the mental health of Brazilians aged 50 years and over during the emergence of the Covid-19 polydemic in Brazil. 571 people participated, aged between 50 and 88 years (M=58.83; SD=6.74), 78.5% of whom were female. = 237) was composed of elderly people (over 60 years old). Regarding the use of online social networks (RSO), 93% of the participants stated that they used these tools. As instruments, we used a sociodemographic questionnaire, the Self-Reporting Questionnaire (SRQ-20), the Hospital Anxiety and Depression Scale (HAD) and the Perceived Social Support Scale (EPSS). Regarding anxiety, depression, CMD and Perceived Social Support scores, no differences were found between people who use OSR and non-users of OSR.

Keywords: Maturity; Elderly; Internet; Online Social Networks; Covid-19.

1. Introduction

Modern society is characterized by the intensification of new interactions (Vidiasova & Grygorieva, 2018), where the internet age has brought about several changes for society, among which is the possibility of socialization through internet-mediated communication tools (computer, cellular, mobile technologies), this communication expanded the connection capacity, enabling the creation of networks in these spaces, the so-called online social networks (Recuero, 2020). In this sense, Recuero (2020) states that understanding social networks is to understand the patterns of connections expressed in cyberspace, analyzing a structural metaphor to understand dynamic elements and the composition of social groups. In view of this, this author exposes that the essence of the network approach is the social structure, and defines a social network as the set between actors (people, institutions or groups) and their connections (interactions or social ties).

According to Santaella (2016), the constitution of networks is given by the participants who use them, since without them, the networks would not exist. Primo (2016) emphasizes that no media is social in itself, so it is interesting to remember in this debate that the characteristic of sociability is part of human nature, a characteristic that is not shared, to date, with any machine, for more technological than it is.

Use of Online Social Networks and Mental Health at maturity during the Covid-19 pandemic

The transformations in the establishment of social relationships mediated by the internet made individuals adapt to modernization, creating new forms of sociability and social organizations (Recuero, 2020). With that in mind, Santaella (2016) talks about the importance of people not only knowing how to handle online social networks, but also understanding what they are doing with people's subjectivity and sociability, not only that, but also understanding the impact of these networks. in memory, in expectations, in desires and desires, in ways of giving and receiving information. Also according to this author, "it has become difficult to minimize the role that digital networks play today in psychic, social, cultural, political and economic life" (p.35).

According to an estimate made by the United Nations, the world population exceeded 7.874 billion in April 2021 (UN, 2021). According to the Digital in 2018 report, published by the online services Hootsuite and We Are Social, of all the inhabitants of the world, more than 4 billion of the population (53%) use the internet and about 3.2 billion (42%) use it. Virtual Social Networks (RSV) (<https://wearesocial.com/blog/2018/01/global-digital-report-2018> accessed November 20, 2018). According to the IBGE (2019), in Brazil, in 2018, the internet was used by 79.1% of households in the country, where 99.2% of households that accessed the internet did so from a cell phone. With regard to Brazilians who did not use the internet, the reasons that stood out the most were the lack of interest in accessing the internet, the high price of the internet access service and the fact that no resident of the household knew how to use the global internet network. Internet.

Also according to the IBGE (2019) there was an increase in internet consumption in all age groups, however, the largest increase occurred in the age group above 50 years of age. Among the objectives researched regarding internet access, sending and receiving text messages, voice or images by applications (not e-mail) was the main one, indicated by 95.7% of the people of age who used the network. Chatting via voice or video calls was mentioned by 88.1% of these people; coming soon after, watching videos, including programs, series and movies (86.1%); and, finally, sending or receiving e-mails (63.2%). Such data are in line with the research carried out by Rondán-Cataluña et al (2020), which found that every day more people around the world are connected to the main social networking sites (Facebook, Twitter, YouTube, Instagram), and the number of its users is skyrocketing. At the end of 2019, Facebook had over 2.5 billion users, Twitter 330 million, YouTube 1.5 billion and Instagram 800 million.

Recent research has shown that there has been a considerable increase in indoor media consumption during the Covid-19 pandemic, suggesting that in times of crisis, people rely heavily on social media and seek to stay connected and eliminate loneliness by staying connected with family. and friends, while following the latest news to stay up to date (Agius, Grech & Grech, 2020; Lemenage et al, 2021). In Malta, online interaction increased by 200% in the early stages of the pandemic in this country, with a significant correlation between online interaction and engagement and the Covid-19 situation in the Maltese population, followed by a simultaneous increase in the emotional imbalance of the population (Agius , Grech & Grech, 2020).

It is worth noting that in addition to other factors, the increased access to media during the Covid-19 pandemic may be due to what the WHO (2020) called an 'infodemic', where the Covid-19 outbreak and

response were accompanied by an overabundance of information, some accurate and some not, making it difficult for people to find reliable sources and the right guidance when they need it. It is an information epidemic in the midst of a pandemic, characterizing well what Recuero (2020) was already debating about the dissemination of information on the internet in an almost epidemic way, which reaches large proportions not only of people online, but also of people offline. Therefore, the population can turn to social media to seek information and also interact, in order to help them deal with the evolving pandemic.

Understanding that the use of the internet and access to online social networks is increasing in contemporary times, and that older adults and the elderly are the fastest growing social group among users of the world wide web (Ferreira & Teixeira, 2017), it is It is urgent and extremely relevant to understand the relationship of this part of the population with the evolution of technology and the changes in social relations mediated by the internet. According to Rondán-Cataluña et al (2020), in the case of social networking sites, the medical literature emphasizes their effectiveness in improving the quality of life of older adults, showing that the use of online social networks by adults and the elderly reduces isolation, improves social participation and increases autonomy. According to these authors, from a health point of view, the elderly who use online social networks tend to have fewer chronic diseases and less depressive symptoms, while their perception of well-being increases.

This means of communication can be fundamental for the group of adults in maturity and the elderly, in which loneliness and isolation trigger physical and mental health problems. These social networks can allow these groups to connect with old friendships, who may live far away or have difficulty getting around, and with family members who have little time to visit and quickly learn about their surroundings. Social networks are a means of communication, which can become a form of healthy entertainment for people in maturity and old age, especially for those who have considerable free time. For all these reasons, it is essential to investigate the use of social networks by people in maturity and old age, especially during the period of social isolation experienced during the Covid-19 pandemic, where face-to-face interactions have become increasingly difficult due to distancing. Social.

2. Method

Kind of study

The study is characterized as exploratory, descriptive, cross-sectional, with a quantitative and qualitative approach.

Participants

In a non-probabilistic and accidental way, 571 people, living in nineteen Brazilian states, aged between 50 and 88 years old ($M=58.83$; $SD=6.74$) participated, among which 78.5% were from the women. It is important to emphasize that of the total number of participants, 41.5% ($N= 237$) were elderly people (over 60 years old).

Instruments

For data collection, the following instruments were used:

- a) Sociodemographic questionnaire: aimed at characterizing the participants in relation to

sociodemographic variables (sex, age, income, marital status, religion, professional activity, state of residence), as well as in relation to the experience of quarantine (if they were complying with the quarantine, number of people living in the house, etc) and the use of online social networks (whether they used it or not).

- b) Self-Reporting Questionnaire [SRQ-20]: this instrument was created (Harding et al., 1980) for the screening of common mental disorders, having already been validated in Brazil (Gonçalves, Stein, & Kapczinski, 2008). The questionnaire consists of 20 items, with a dichotomous response scale (yes or no), which constitute four factors (Depressive/Anxious Mood, Somatic Symptoms, Decreased Vital Energy, Depressive Thoughts). In this study, seven or more affirmative responses were considered as a cut-off point (Gonçalves et al., 2008; Carlotto, 2016).
- c) Hospital Anxiety and Depression Scale, HAD (Hospital Anxiety and Depression Scale): this is an instrument validated in Brazil (Botega, Bio, Zomignani, Garcia Jr, & Pereira, 1995), initially developed to identify symptoms of anxiety and depression in hospitalized people. The scale was subsequently validated for other contexts (Marcolino et al., 2007), and can be applied to other non-clinical samples (Djukanovic, Carlsson, & Arestedt, 2017). The instrument consists of 14 items, which constitute two independent subscales: HAD-a (Hospital Anxiety and Depression Scale - Anxiety, consisting of seven odd items; and HAD-d (Hospital Anxiety and Depression Scale - Depression), consisting of seven even items. Each subscale has scores ranging from 0 to 21. Scores of 0, 1, 2 or 3 points are given to the answers given to each item, which are added together to determine the cut-off point. As a cut-off point, it considered scores equal to or greater than eight are considered indicative of symptoms of anxiety and symptoms of depression (Olsson, Mykletun, & Dahl, 2005). In the assessment of distress, the HAD is analyzed as a single scale, with a score between 0 and 42, having as a cutoff point indicative of distress scores equal to or greater than 15 (Djukanovic et al., 2017).

Procedure

Data collection was carried out through an online questionnaire, prepared in the Google Forms tool, and disseminated on social networks (Facebook, Instagram and WhatsApp) and through emails. The beginning of the application of the questionnaire only occurred after reading the Free and Informed Consent Term and confirmation of voluntary participation. In addition, the snowball technique was used to gain access to participants with lower levels of education or who did not have social networks, who were approached through a phone call (video or voice call). After the application of the instrument, the indication of another person who could participate in the research was requested.

The research was approved by the research ethics committee (opinion No. 3,785,933), respecting all ethical procedures set out in Resolution 466/2012 of the National Health Council. Data collection took place between May 8 and 18, 2020. On the last day of the survey, Brazil had 254,220 confirmed cases of COVID-19 and 16,792 deaths related to the disease.

Data analysis

Data from the sociodemographic questionnaire were analyzed using descriptive statistics (frequency, percentage, mean and standard deviation). The data resulting from the SRQ-20, HAD and PSS scales were analyzed using descriptive statistics, bivariate and average comparison [Chi-square; Pearson's correlation (r); Test t and ANOVA]. The prevalence of CMD, distress and symptoms of anxiety and depression was estimated using the chi-square, considering as statistically significant associations those with p values < 0.05.

3. Results and Discussion

It was observed that 78.5% (n= 448) of the participants were female. Regarding marital status, 55.9% (n=319) were married or in a stable relationship; 20.8% (n=119) were separated/divorced; 14.2% (n=81) were single and 9.1% (n=52) were widowed. The data pointed to a high level of education, given that 37.4% (n = 213) of the participants had a graduate degree, 36.3% (n = 207) had higher education, 14.7% (n = 84) had completed high school, 3.5% (n=20) of respondents had incomplete high school, 3.2% (n=18) had completed elementary school, and 4.9% (n=28) had no schooling or had not completed elementary school. With regard to income, it was found that 62.5% (n=357) of the participants had an income of more than two minimum wages, which may be related to the data collection strategy via an online form, since people with higher incomes and education are those who have greater access to the internet and use of electronic devices, such as smartphones and computers connected to the internet. Other sample characterization data can be seen in Table 1.

Table 1. Frequencies and percentages referring to sociodemographic data

Variables	f (%)
<i>work situation</i>	
Retiree	223 (39,1)
Employee	228 (39,9)
Unemployed	29 (5,1)
Informal/self-employed worker	69 (12,1)
Others	22 (3,8)
<i>Religion</i>	
Catholic christian	369 (64,6)
Evangelical Christian	90 (15,8)
Spiritist	54 (9,5)
I do not have religion	30 (5,3)
Others	28 (4,9)

Regarding the use of online social networks (RSO), 93% (N=531) of the participants stated that they used these tools and 1.4% (N=8) stated that they had started using them during stricter social isolation (remembering that this survey was carried out in May 2020, a period in which Brazil was experiencing stricter measures to contain the disease), 4.2% (N=24) said they had never used online social networks,

Use of Online Social Networks and Mental Health at maturity during the Covid-19 pandemic

while 1.4 % (N=8) said they had used it, but no longer used it. Such data corroborate the literature, which already indicates the increase in the number of users on online social networks among older adults and the elderly (Ferreira & Teixeira, 2017; IBGE, 2019). However, the fact that this research was carried out online may also have contributed to this result.

Regarding the analysis of the prevalence of Common Mental Disorders (CMD), distress (HAD) and symptoms of anxiety (HAD-a) and depression (HAD-d), it was found that 28.3% (n=161) of the research participants showed a prevalence of CMD, 31.5% (n=180) of distress, 31% (n=180) had symptoms of anxiety and 28.2% (n=161) of depression.

In this study, the statements most frequently indicated in the SRQ-20, which assesses the CMD, showed that most participants have symptoms related to sleep, performing daily activities, losing interest in things and feeling tired easily. Such symptoms cannot be confused with expected aspects for the age, but they are indicative of psychological distress, which demands early clinical management, avoiding the worsening of symptoms.

Regarding the factors of the SRQ-20 scale, the symptoms most often positively indicated by the participants were: Feeling nervous, tense or worried, Have you been feeling sad lately, Sleep poorly and Do not feel satisfied (like) in your daily activities.

Table 2. Frequency of positively marked symptoms, according to the SRQ-20 factors.

Symptom group	Yes f (%)
<i>Depressed/anxious mood</i> Tenso/preocupado	326 (57,1)
feel unhappy/sad	275 (48,2)
Get scared easily	154 (27,0)
cry more than usual	97 (17,0)
<i>Somatic Symptoms</i> Dorme Mal	220 (38,5)
Unpleasant feeling in the stomach	135 (23,6)
Indigestion	124 (21,7)
Headache	120 (21,0)
have a lack of appetite	50 (8,8)
your hands shake	50 (8,8)
<i>Decrease in Vital Energy</i>	
Finds it difficult to enjoy (enjoy) their daily activities	179 (31,3)
get tired easily	178 (31,2)
Difficulty making decisions	147 (25,7)
Feeling tired all the time	127 (22,2)
Can't think clearly	108 (18,9)
Your daily work is a pain	78 (13,7)
<i>Depressive thoughts</i>	
Loss of interest in things	124 (21,7)
Does not feel capable of playing a useful role in life	76 (13,3)
You think you're a worthless person	54 (9,5)
Thought of ending your life	15 (2,6)

The prevalence rates of CMD, distress and symptoms of anxiety and depression among the participants had values close to those found in previous studies. However, most of the study samples consisted of elderly people with clinical demands, such as chronic diseases (Fagundes et al., 2020), in contexts of vulnerability and with an income of less than two minimum wages (Rocha et al., 2012). In addition, in some studies, the cutoff point adopted for the SRQ-20 was 5/6 points. In this study, seven points were considered as indicative of CMD. Furthermore, the majority of participants in this research were people with high levels of education and income.

Added to all the issues related to living conditions, there is still the fear of death, the feeling of loneliness due to the quarantine and the mourning for possible losses during the pandemic. The association between loneliness, grief and psychological suffering in the elderly and people in maturity, after the Covid-19 pandemic, has been pointed out as demands in mental health that will need further investigation (Holmes et al., 2020).

About the use of online social networks, considering the integrative literature review carried out by Pimentel, Silva and Pichelli (2022), which pointed out the correlation between the use of online social

Use of Online Social Networks and Mental Health at maturity during the Covid-19 pandemic

networks and benefits in mental health and psychic well-being, and taking into account Considering also the research carried out during the Covid pandemic on this subject, indicating results similar to what was found in the literature review, an analysis of comparison of means was carried out in order to verify if there were differences in the prevalence of symptoms of anxiety, depression and TMC and perception of social support between users and non-users of online social networks. The analyzes showed that although the mean prevalence of CMD was higher among non-users of ORS (M = 5.59; SD = 4.38) than the average of OSR users (M = 4.56; SD = 4 .08), this difference was not statistically significant [t (569) = 1.38; p > 0.05]. Regarding the perception of social support and participants who make use or not of online social networks, no differences were found between the means. Regarding the symptoms of anxiety and depression, although the mean anxiety of these constructs was higher for participants who did not use OSR, there was no statistically significant difference, as can be seen in the table below:

Table 3. Comparison of mean symptoms of anxiety, depression and prevalence of CMD.

Variable	N	Average	DP	T	P
TMC					
RSO users	539	4,56	4,08	-1,38	0,16
No RSO Users	32	5,59	4,38		
PSS					
RSO users	539	87,0	20,2	0,03	0,97
No RSO Users	32	86,9	15,2		
Anxiety					
RSO users	539	5,9	4,13	-0,34	0,73
No RSO Users	32	6,1	3,55		
Depression					
RSO users	539	5,3	3,86	-1,28	0,19
No RSO Users	32	6,2	3,56		

The fact that there were 93% more participants using online social networks (N= 531) than participants who are not users may have influenced the results above. However, it is noteworthy that the way of accessing participants, through the use of online platforms for data collection, justified by the moment of social isolation due to the polydemic context, may have contributed to the profile of this sample. Furthermore, it should be noted that the moment of the pandemic itself may have indiscriminately impacted the mental health of individuals, with no distinction between users of online social networks or not. On the other hand, it is important to emphasize that no media is social in itself, since nothing is social in advance,

Use of Online Social Networks and Mental Health at maturity during the Covid-19 pandemic

since the social is only established when relationships occur (Primo, 2016). In this perspective, Van Deursen (2020), in a research carried out on digital inequality during the pandemic in the Netherlands, found that unexpectedly, social resources were not considered influential. Apparently, a person who has an offline support network will not necessarily rely more on web-based information and communication support during a crisis.

In this sense, Recuero (2016) states that “what seems to happen on social networking sites is an amplification of connections and a change in connectivity patterns” (p.55), that is, those who are not adept at online social networks do not interact, but they interact in other ways, whether face-to-face or mediated by landline or cell phone. This demonstrates the basic human need to interact socially, testifying that the human being is a social being (Chauí, 2013), and due to its essence, socialization will happen, whether mediated by some technological resource or not.

5. Conclusion

In the course of this research, it was proposed to carry out an analysis on mental health and the use of online social networks by people in maturity and old age, during the emergence of the Covid-19 polydemic. In general, it was observed that the Covid-19 pandemic had a negative impact on the mental health and psychological well-being of people aged 50 and over, a population that is growing the most in Brazil and in the world, given the aging process. world population.

It is necessary to re-signify care actions for the elderly, respecting the plurality of aging. As a possibility, it is necessary to think about the very notion of mental health, understanding that aspects such as income, family and social support and strengthening of mutual help groups, even virtual, will be fundamental for mental health care.

This study is considered to contribute to the academic literature on the use of online social networks by the elderly during the Covid-19 pandemic and the impact on psychic health. With regard to mental health (CMD, anxiety, depression), comparisons were made between people who use online social networks and people who do not use these networks, and no statistically significant differences were found. It can be considered that the moment of the pandemic itself may have indiscriminately impacted the mental health of individuals, with no distinction between users of online social networks or not. Furthermore, it is possible that, for this age group, the use or not of an online social network may not be influential in the psychic sphere.

The fact that it was carried out online, restricting the participation of people without access to the internet, constitutes a limitation of this study, and may not represent the population universe of people aged 50 years or older. In future studies, research with samples that contemplate old age, in its different forms, is suggested.

6. References

Agius, S., Grech, A. & Grech, V. (2020). The way in which COVID-19 changed behaviour on social media in Malta. *Early Human Development*, doi: 0.1016.

Use of Online Social Networks and Mental Health at maturity during the Covid-19 pandemic

- Botega, N. J., Bio, M. R., Zomignani, M. A., Garcia Jr, C., & Pereira, W. A. (1995). Transtornos do humor em enfermaria de clínica médica e validação de escala de medida (HAD) de ansiedade e depressão. *Revista de Saúde Pública*, 29(5), 359-363. doi:[10.1590/S0034-89101995000500004](https://doi.org/10.1590/S0034-89101995000500004)
- Carlotto, M. S. (2016). Transtornos mentais comuns em trabalhadores de Unidades Básicas de Saúde: prevalência e fatores associados. *Psicologia Argumento*, 34(85), 133-146. doi:[10.7213/psicol.argum.34.085.AO04](https://doi.org/10.7213/psicol.argum.34.085.AO04)
- Chauí, M. (2013). O ser humano é um ser social. Ed. WMF Martins Fontes, São Paulo, 1ª Ed.
- Djukanovic, I., Carlsson, J., & Arestedt, K. (2017). Is the Hospital Anxiety and Depression Scale (HADS) a valid measure in a general population 65-80 years old? A psychometric evaluation study. *Health and quality of life outcomes*, 15(1), 193-193. doi:[10.1186/s12955-017-0759-9](https://doi.org/10.1186/s12955-017-0759-9)
- Fagundes, I. V. O., Oliveira, L. P. B. A., Barros, W. C. T. S., Magalhães, A. G., Medeiros, M. R. S., & Pereira, D. O. (2020). Transtorno mental comum em idosos com doenças crônicas não transmissíveis na atenção primária à saúde. *Cienc Cuid Saude*, 19, e50072. doi:[10.4025/ciencucuidsaude.v19i0.50072](https://doi.org/10.4025/ciencucuidsaude.v19i0.50072)
- Ferreira, M.C. & Teixeira, K.M.D. (2017). O uso de redes sociais virtuais pelos idosos. *Estudos Interdisciplinares sobre o envelhecimento*. 22(3). 153-167. Recuperado em 10 de Novembro, 2019, de <https://seer.ufrgs.br/RevEnvelhecer/article/view/74595>
- Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., ... & Ford, T. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry*, 366, 1-14. doi:[10.1016/S2215-0366\(20\)30168-1](https://doi.org/10.1016/S2215-0366(20)30168-1)
- IBGE (2019). Pesquisa Nacional por Amostra de Domicílios Contínua. Notas Técnicas. 4ª Ed. Rio de Janeiro. Recuperado em 13 de Janeiro, 2021, de https://biblioteca.ibge.gov.br/visualizacao/livros/liv101651_notas_tecnicas.pdf
- Lemenager, T., Neissner, M., Koopmann, A., Reinhard, I., Georgiadou, E., Müller, A., Kiefer, F. & Hillemaier, T. (2021). COVID-19 Lockdown Restrictions and Online Media Consumption in Germany. *Int. J. Environ. Res. Public Health*, 18(14). doi: 10.3390/ijerph18010014
- Marcolino, J. Á. M., Mathias, L. A. S. T., Piccinini Filho, L., Guaratini, A. A., Suzuki, F. M., & Alli, L. A. C. (2007). Escala hospitalar de ansiedade e depressão: estudo da validade de critério e da confiabilidade com pacientes no pré-operatório. *Rev Bras Anesthesiol*, 57(1), 52-62. doi: [10.1590/S0034-70942007000100006](https://doi.org/10.1590/S0034-70942007000100006)
- Organização Mundial de Saúde – OMS. (2020). Recuperado em 13 de Janeiro, 2021, de https://www.paho.org/bra/index.php?option=com_content&view=article&id=6249:infodemia-tem-tornando-resposta-as-emergencias-de-saude-ainda-mais-dificil-afirma-opas-em-aula-inaugural-de-pos-graduacao-de-comunicacao-em-saude&Itemid=875
- Pimentel, P.L.B., Silva, J. & Pichelli, A.A.W.S. (2022). Social representations of users over 50 years about the internet and online social networks. *Research, Society and Development*. DOI: <https://doi.org/10.33448/rsd-v11i4.27071>
- Primo, A. (2016). Interações Mediadas e Remediadas: Controvérsias entre utopias da cibercultura e a grande indústria midiática. In A. Primo (Org). *Interações em Rede*. pp. 13-32. Porto Alegre: Sulina.

Use of Online Social Networks and Mental Health at maturity during the Covid-19 pandemic

Recuero, R. (2020). *Redes Sociais na Internet*. Sulina, Porto Alegre. 2ª ed.

Rocha, S. V, Almeida, M. M., Araújo, T. M. D., Rodrigues, W. K. M, Santos, L. B, & Virtuoso Júnior, J. S. (2012). Prevalência de transtornos mentais comuns entre idosos residentes em município do Nordeste do Brasil. *Revista de Salud Pública*, 14, 620-629. doi: [10.1590/1413-81232018232.12852016](https://doi.org/10.1590/1413-81232018232.12852016).

Rondán-Cataluña, F.J., Ramírez-Correa, P.E., Arenas-Gaitán, J., Ramírez-Santana, M., Grandón, E.E. & Alfaro-Perez, J. (2020). Social Network Communications in Chilean Older Adults. *Int. J. Environ. Res. Public Health* , 17(6078), doi:10.3390/ijerph17176078

Santaella, L. (2016). Intersubjetividade nas redes digitais: Repercussões na educação. In A. Primo (Org). *Interações em Rede*. pp. 33-50. Porto Alegre: Sulina.

Van Deursen A.J. (2020). Desigualdade digital durante uma pandemia: estudo quantitativo das diferenças nos usos e resultados da Internet relacionados ao COVID-19 entre a população em geral. *Journal of medical Internet research* , 22 (8), e20073. <https://doi.org/10.2196/20073>

Vídiasova, L.A. & Grigoryeva, I.A. (2018). Investigation of internet-communities' influence on the social inclusion of the elderly people through leisure practices. *Advances in Gerontology*, 31(4), pp. 697-603. Recuperado em 12 de Janeiro, 2021, de <https://pubmed.ncbi.nlm.nih.gov/30607926/>