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COVID-19 pandemic: the population's view of preventive measures

Pandemia de COVID-19: la visión de la población sobre las medidas preventivas

Pandemia de COVID-19: o olhar da população em relação às medidas preventivas

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Abstract

The aim of the study was to understand the population's perception of preventive measures to contain the transmission of the new coronavirus. Cross-sectional, exploratory, and descriptive study, with a quantitative approach, of non-probabilistic sampling. The research subjects were users of the social networks Facebook, Instagram, and WhatsApp. An online form was used with sociodemographic and specific questions about this study. It was found that most participants support physical distance as necessary to control the COVID-19 pandemic, however, when it involves individual practices, it was observed that there is a divergence with the previous discourse. More in-depth studies are needed to better understand the factors involved in citizens' adherence or not to the measures imposed by health and government authorities and thus, they may be more assertive in the proposed measures.

Descriptors: Respiratory Diseases; Coronavirus Infections; Public Policy; Pandemic; Public Health.

Resumén

El objetivo del estudio fue conocer la percepción de la población sobre las medidas preventivas para contener la transmisión del nuevo coronavirus. Estudio transversal, exploratorio y descriptivo, con enfoque cuantitativo, de muestreo no probabilístico. Los sujetos de investigación fueron usuarios de las redes sociales Facebook, Instagram y WhatsApp. Se utilizó un formulario online con preguntas sociodemográficas y específicas sobre el tema de este estudio. Se encontró que la mayoría de los participantes apoyan la distancia física como necesaria para controlar la pandemia de COVID-19, sin embargo, cuando se trata de prácticas individuales, se observó que existe una divergencia con el discurso anterior. Se necesitan estudios más profundos para comprender mejor los factores que intervienen en la adherencia o no de los ciudadanos a las medidas impuestas por las autoridades sanitarias y gubernamentales y, por tanto, pueden ser más asertivos en las medidas propuestas.

Descriptores: Enfermedades Respiratorias; Infecciones por Coronavirus; Política Pública; Pandemia; Salud Pública.

Resumo

O objetivo do estudo foi compreender a percepção da população sobre as medidas preventivas para conter a transmissão do novo coronavírus. Estudo transversal, exploratório e descritivo, com abordagem quantitativa, de amostragem não probabilística. Os sujeitos da pesquisa foram usuários das redes sociais *Facebook*, *Instagram* e *WhatsApp*. Foi utilizado um formulário *online* com questões sociodemográficas e específicas sobre o tema deste estudo. Verificou-se que a maioria dos participantes apoiam o distanciamento físico como necessário para controle da pandemia de COVID-19, porém, quando envolve práticas individuais, observou-se que há divergência com o discurso anterior. Estudos mais aprofundados são necessários no sentido de compreender melhor os fatores envolvidos na adesão ou não dos cidadãos às medidas impostas pelas autoridades sanitárias e governamentais e assim, poderão ser mais assertivos nas medidas propostas.

Descritores: Doenças Respiratórias; Infecções por Coronavírus; Política Pública; Pandemia; Saúde Pública.

Introduction

The new coronavirus is a type of virus that causes the disease called COVID-19, which causes Severe Acute Respiratory Syndrome (SARS) and gastrointestinal syndrome in humans, and can be mostly asymptomatic cases.[1] The transmission of the SARS-CoV-2 virus (new coronavirus) occurs through secretions such as saliva and airway secretion, from an infected person to an uninfected one; aerosols; objects and surfaces contaminated by respiratory droplets or secretions; and hands without proper and frequent hygiene.[2]

According to the notifications registered in the Special Epidemiological Bulletin until Epidemiological Week 29, deaths from Severe Acute Respiratory Syndrome (SARS) by COVID-19 had some comorbidities and risk factors for the disease. Among them are heart disease, diabetes, 60 years of age or older, kidney and neurological disease, lung diseases, among others.[3]

The first reported cases of human infection with the new coronavirus (SARS-CoV-2) occurred in December 2019, in Wuhan, China.[4] With high potential for transmissibility, the virus has spread throughout the world. In March 2020, the World Health Organization (WHO) defined the event as a pandemic.[5] Until July 22, 2020, 14,765,256 confirmed cases of the disease and 612,054 deaths were registered.[6]

In Brazil, the first confirmed case record for COVID-19 was in February,[3] and as of September 10, 2020, it caused 128,539 deaths and had 4,197,889 confirmed cases.[7] At the state level, until September 10, Paraná had 146,770 confirmed cases and 3,671 deaths by COVID-19.[8] In the city of Maringá, Paraná, on September 10, it manifested 6,842 confirmed cases and had 119 registered deaths.[9]

Measures to contain the transmission of the new coronavirus have been developed worldwide. These measures address basic individual non-pharmacological practices, such as: hand hygiene, respiratory etiquette, use of masks, physical distance, environmental measures, among others.[10]

One of the goals of the National Contingency Plan is to disseminate standards, guidelines, Epidemiological Bulletins, newsletters, press conferences, and health education materials for health professionals.[11]

The Ministry of Health (MH) makes available several instructive instruments with a series of actions to be adopted, both by health professionals and the population in general, which are available on the social media of MH[12] and accessible to all individuals who have access to the internet, also counting on an application containing several newsletters.[13]

The Expanded Social Distancing is a strategy that reduces the speed and the partial control of the spread of the virus, aiming at the permanence of the population in their homes, avoiding agglomerations.[14] However, it is notable that a part of the population, especially in the city of Maringá-PR,[15,16] did not adhere to all recommendations made by countless competent bodies for the sake of public health. In view of this, administrative measures were taken to reduce unnecessary extra-household circulation of individuals.[17]

Therefore, considering the health problems that SARS-CoV-2 can cause in the population, in the health team that takes care of patients, the expense that health institutions expend for care and, the consequences not yet known that the disease cause, it is necessary to understand whether individuals understand the seriousness and severity of the pandemic.

The population's awareness is shown to be competent in combating the new coronavirus, since now, it is the only effective prophylactic action against it. Therefore, the aim of the present study was to understand the population's perception of preventive measures to contain the transmission of the new coronavirus.

Methodology

Cross-sectional, exploratory, and descriptive study, with a quantitative approach, of non-probabilistic sampling. The research audience was users of the social networks Facebook, Instagram, and WhatsApp, who had an account on any of the platforms mentioned, being over 18 years old, inhabitants of the city of Maringá, in the state of Paraná, and of the cities in the region. metropolitan area, comprising 29 other municipalities.[18] The region selected for the study is justified by the convenience of the participants 'access to the researchers' social networks, in addition to facilitating the analysis through the preventive measures adopted in the territory.

As an instrument of data collection, an online form was created using the Google Drive platform, in the Google Forms option, with the questionnaire in an objective and multiple-choice format, addressing sociodemographic and specific questions about this study.

The first stage of the form contained two questions related to ethical background, aiming that the participants were over 18 years old and accepted to participate in the research by agreeing with the Free and Informed Consent Term, and only afterwards the main questions of the form to which they fit these terms. The access link to the form was sent via the digital platforms of the researcher's personal social networks, such as Facebook, Instagram, and WhatsApp, publicly disclosed and sent by individual messages. Furthermore, using the Snowball method[19], participants approached by the researcher were asked to send the link to access the form to other people who lived in the same city, to reach more people and reach more audiences for the research. Access to the form was available for responses between May 23 and June 8, 2020, enough time for the dissemination of the survey and feedback.

The data were automatically counted on the Google Forms platform, being stored in a spreadsheet, identifying the questions and answers of each research collaborator. For content analysis, data were organized into tables and graphs, being analyzed using descriptive and inferential statistics.

This research took place in accordance with the norms contained in the Resolutions of the National Health

Council No. 466, of December 12, 2012, and No. 510, of April 7, 2016. Data collection occurred only after approval by the Research Committee. Research Ethics (CEP) of the Cesumar University (UniCesumar), under Opinion No. 4,001,691, approved on April 30, 2020. Participants agreed to collaborate with the research by agreeing to the Free and Informed Consent Form. The responses were completely anonymous, not identifying the name or number of personal documents of the participants.

Results

Upon sending the form, 818 people answered, excluding 76 respondents who were not residents of Maringá and the metropolitan area, totaling 742 participants, with WhatsApp identifying 40% of responses, Instagram 34.8%, and Facebook 25.2%.

As for the characteristics of the participants, 69% were female and 31% male. Regarding fixed age, 13.3% were between 18 and 20 years old, 35.3% between 21 and 25 years old, 24.1% between 26 and 30 years old, 10.9% between 31 and 35 years old, 6.06 % from 36 to 40 years old, 4.31% from 41 to 45 years old, 2.7% from 46 to 50 years old and 2.24% were over 50 years old.

Regarding the municipality of residence, the majority (53%) live in Paiçandu, Maringá (38%) and in the other cities (9%): Sarandi, Marialva, Floresta, Ourizona, Florida, Mandaguaçu, São Jorge do Ivaí, Astorga, Itambé, Iguatemi, Nova Esperança, Dr. Camargo, Mandaguari, Atalaia, Santa Fé and Ivatuba.

In the variable on the level of education, there was a predominance of Higher Education (49.3%) and High School (48.8%). Graduated participants graduated in the following areas: Biological and Health Sciences 39.9%, Human and Social Sciences 33.9%, Exact, Technological and Agrarian Sciences 24.0%. The participants who completed Higher Education are graduates from the areas of Human and Social Sciences 36.2%, Biological and Health Sciences 45.2% and Exact, Technological and Agrarian Sciences 17.4%.

Many participants (39%) said that they follow the news of the pandemic through social networks, which are the most affected targets by Fake News. Most of them (65.6%) believe that the news is real. In general, the media is the main instrument of awareness among the population regarding the seriousness of the pandemic in Brazil (67.5%). A good part of the research participants (48.8%) think that the epidemiological data presented in their city are real. Still, 70.2% of the participants consider that the situation in other countries in relation to the COVID-19 pandemic should be used as an example to follow, as a precautionary measure.

Regarding to the economy, this study showed that the majority (56.5%) considered it necessary to partially close trade and companies, maintaining the functioning of only essential services. A similar percentage of 59.7% of people answered that they were not harmed by this, maintaining their work routine.

In addition, 42.9% of the participants are against the reopening of companies at this time in Brazil, since 42.7% believe that with this, the physical distance and other precautionary measures recommended by the Ministry of Health will be disrespected. In this context, 81.5% believe that the distance between one individual and another is not fully obeyed by the population.

Table 1. Participants' responses (n = 742) about preventive measures against the new coronavirus. Metropolitan area of Maringá, PR, Brazil, 2020

Variables	N	%
Media used to monitor COVID-19 pandemic news		
Social media (Facebook, WhatsApp, Instagram, Twitter, etc.)	567	39.1
TV	461	31.8
Printed or online newspaper	214	14.8
Scientific articles / studies	184	12.7
I am not following the news	23	1.6
As for news of the situation in Brazil and the world		
I believe they are real	487	65.6
I believe they are manipulative and / or exaggerated	170	22.9
I believe they are a scam	12	1.62
I have no opinion about it	73	9.84
Compliance of the population in relation to the physical distance of two meters		
Yes	28	3.77
No	605	81.5
Maybe	107	14.4
I have no opinion about it	2	0.27

Personal compliance with the rules of social distance		
Yes	431	58.1
No	27	3.6
I deviated a little from the norms	284	38.3
Non-compliance with preventive guidelines		
I do not regret	132	17.8
Yes, I regret it and will not break again	211	28.4
I do not regret it and I will continue to break the rules	6	0.81
Not applicable	393	53
What are you doing to help fight the spread of the virus?		
Frequent hand washing	675	16.3
Use of mask	713	17.2
Frequent cleaning of surfaces	453	11
Use of 70% liquid alcohol and / or gel	698	16.9
Social distancing	527	12.7
Covering my mouth with my arm when I am going to sneeze or cough	530	12.8
Avoiding leaving home	534	12.9
I am not doing any of the options	5	0.12

Still, regarding physical distance, 80.1% consider it to be an important measure, although only 58.1% strictly comply with the rules and 38.3% have already partially breached them.

The main reasons for not complying with physical distance were meetings between friends and family (15.7%), visits to family and friends (11.8%) and physical activities in public environments (3%). Of those who did not comply with the distancing rules, 28.4% said they regret it and did not intend to do it anymore, however, 17.8% did not show regret.

When asked about compliance with physical distance and the need to avoid leaving home, 25.6% responded positively. However, when answering about the activities carried out during the pandemic, the contradiction was evident, where 30.9% performed non-essential actions. Most participants believe they are contributing to the fight against Coronavirus Sars-CoV-2, with frequent hand washing (16.3%), use of face mask (17.2%), frequent cleaning of surfaces (11%), 70% alcohol use (16.9%), and covering the mouth with the arm when sneezing / coughing (12.8%).

Table 1 shows some variables on the participants' opinion regarding individual and group prevention measures against the new coronavirus.

When analyzing the results, it is possible to observe a discrepancy in the responses. Most of the participants believe that other countries should be used as an example for adopting preventive methods here in Brazil, supporting the closing of trade and physical distance, and claimed that they had not suffered labor damages with these actions. But, when it involves the individual practices of the population, the situation becomes divergent with the previous narrative.

Discussion

According to this study, social networks proved to be the preferred medium for information about the pandemic. As it is an important tool, which does not always offer reliable content and is full of Fake News, leaders and members of the media should choose to use it to promote actions that direct the population to cooperative behavior, inciting awareness for preventive measures.[20]

Social networks have the power to disseminate beneficial or harmful behaviors, being associated with true or mistaken news, demonstrating the potential to disseminate information, which can harm or collaborate with preventive interventions.[20]

The data presented in this research demonstrate that the community makes little use of scientific information such as case reports and indexed scientific articles. In this context, it is known that social media platforms can fail, bringing false news and misinformation to the public, causing confusion and distortion of true, reliable, and real facts.[20]

With this in mind, the Ministry of Health created a channel in the WhatsApp application to answer the doubts of the population and health professionals regarding the new coronavirus, assisting in the diagnosis, guiding the care networks and patient management protocols.21 The purpose of this tool is to provide the citizen with reliable information from a reliable source, avoiding the spread of Fake News, in addition to being present, also, in other social media,[12] producing informative content for health promotion and prevention and population adherence to campaigns.

The media plays an important role in raising public awareness of the COVID-19 pandemic and the way

information is disseminated can bring awareness and awareness to individuals. It can and must be integrated in the planning and management of health crises, collaborating with the clarification of the population and direct involvement in certain actions. It is informed daily, the number of people who were infected and those who died because of the disease. The impact of reality on coronavirus victims can awaken the public to reality, generating awareness of risks, which are often neglected individually or in groups.[20]

The Ministry of Health has chosen to present positive and negative data about COVID-19 in the country, demonstrating the number of people who have recovered from the disease, those whose diagnosis has been confirmed and those who have died,[7] this action should be better studied to assess the impact that this information has on citizens in emotional and behavioral aspects.

When asked about using the events in the face of the COVID-19 pandemic in other countries as a lesson to follow or not, more than 70% of the participants in this research agree to adopt this method. An example was Italy's position to disseminate information about the pandemic, highlighting the conflict between the scientific community and government policy, which showed divergent opinions, diminishing the credibility of the information and actions to contain the impact caused by the virus.[22]

Resulting from the previous question and the false news, companies labeled as non-essential and the population itself underestimated the importance and veracity of the information and ended up not respecting the contingency actions of the virus.[22] Likewise, it can be seen in Brazil, where a situation like that of Italy occurred, leading the population to disbelieve and respect the preventive and protective measures during the pandemic.

Another comparative of the behavior of the Brazilian population and that of another region of the world, especially in terms of physical distance, a study in Singapore, shows similarity in non-compliance with distance, especially among family members and groups of friends. The study participants understood that they were already developing sufficient preventive measures, even keeping physical contact with other individuals outside their home environment and who were willing to take risks. This indicates that the interpretation of risks and general perception of the pandemic situation is relative, considering the individuality and beliefs of the population and what is really advocated by scientists and health authorities.[23]

The information absorbed by the population is as powerful as the actions to combat the new coronavirus. Being based on evidence, accurate and from genuine sources, they corroborate people's awareness, allowing the adoption of appropriate behavior, benefiting themselves and others. In this item, the Pan American Health Organization (PAHO) produced educational communication material, where it denies rumors, informs about specific health situations, and provides guidance on preventive measures to combat the virus, viable for dissemination on social media.24 On the other hand, it is believed that the misinformation caused by improperly disseminated news is still one of the biggest challenges to be overcome.[25]

In view of the pioneering nature of this pandemic, there are still scientific uncertainties related to COVID-19 and the medium and long-term repercussions on the social, financial, emotional and health of the affected population. The negative effects related to the new coronavirus and the functioning of commerce and companies are uncertain, understated and without precise predictions. For this reason, the principles supported by scientific and expert evidence must be taken into consideration, to reduce problems and assist in decisions, especially policies.[26]

It is known that non-pharmacological prophylactic actions are efficient, including simple measures, such as: correct hand washing, use of tissue or surgical mask, physical distance, identification of suspected and confirmed cases for their isolation, avoidance crowded places, among others, are essential to prevent the transmission of SARS-CoV-2.[5]

Among the measures presented, physical distance demonstrates to be an effective technique for controlling the spread of the new coronavirus. On the other hand, this distance can interfere in the individual's emotions, highlighting feelings of loneliness, stress, depression, and can bring long-term psychological and emotional consequences.[20]

A study [27] carried out in ten countries in Europe, America, and Asia, evaluated the perception of risk that the population presents about the contagion of the new coronavirus, being identified that the sociodemographic, cultural and cognitive variables, social and individualistic values are the main factors that interfere in the increase new cases. This shows that it is essential to understand the population's perception of the risk of contamination by SARS-CoV-2. In this sense, strategic actions taken by health authorities can minimize the rapid transmission of the disease.

Another aggravating factor that increases people's exposure to the risk of contamination by COVID-19 is misinformation. Consequently, this risk added to the lack of effective information, intensifies the problems for public managers and the scientific community. The disorder and the disrepute conveyed by the media, hinder the process of accreditation of the severity of the disease and its behavior in different population groups.[22]

Therefore, it is necessary that not only the health sciences intervene in actions that minimize the impact of the COVID-19 pandemic, but also the social and behavioral sciences,[20] to know individual and collective aspects that are relevant to this context. Identifying the population's perception and understanding of the behaviors that lead to the risk of contagion has the potential to facilitate the management of public health policies and sanitary actions to control the pandemic.[28]

Final Considerations

In view of the results presented, political / administrative factors and inefficient information seem to justify the failure to comply with the protection and

prevention measures reported by many of the participants in this study. Despite showing a favorable opinion on virus mitigation methods, in practice they do not correctly comply with these precepts, showing social irresponsibility. Thus, more in-depth studies are needed to better understand the social, cultural, financial, emotional and behavioral factors involved in whether or not citizens adhere to the measures imposed by health and government authorities, thus, they may be more assertive in more effective public policy proposals.

References

1. Ministério da Saúde (BR). Guia de Vigilância Epidemiológica: Emergência de Saúde Pública de Importância Nacional pela Doença pelo Coronavírus 2019: Vigilância Integrada de Síndromes Respiratórias Agudas: Doença pelo Coronavírus 2019, Influenza e outros vírus respiratórios. Brasília: Ministério da Saúde [Internet]. 2020 Abr. [citado 2020 abr 06]. Disponível em: https://www.saude.gov.br/images/pdf/2020/April/06/GuiaDeVigiEp-final.pdf
2. World Health Oraganization (HWO). Transmission of SARS-CoV-2: implications for infection prevention precautions: scientific brief, 09 July 2020. World Health Oraganization [Internet]. 2020 Jul [cited 2020 Jul 23]. Available from: https://apps.who.int/iris/handle/10665/333114
3. Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Boletim Epidemiológico Especial 23: Doença pelo Coronavírus COVID-19. Brasília: Ministério da Saúde [Internet]. 2020 Jul [citado 2020 jul 23]. Disponível em: https://saude.gov.br/images/pdf/2020/July/22/Boletim-epidemiologico-COVID-23-final.pdf
4. Croda JHR, Garcia LP. Resposta imediata da Vigilância em Saúde à epidemia de COVID-19. Epidemiol. Serv. Saúde. [Internet]. 2020 Mar [citado 2020 jul 22]; 29(1): e2020002. DOI: 10.5123/S1679-49742020000100021. Disponível em: https://www.scielosp.org/article/ress/2020.v29n1/e2020002/pt/
5. Organização Pan-Americana da Saúde no Brasil (OPAS/OMS Brasil). OMS confirma que COVID-19 é agora caracterizada como pandemia. Organização Pan-Americana da Saúde. [Internet]. 2020 Mar [citado 2020 jul 23]. Disponível em: https://www.paho.org/bra/index.php?option=com_content&view=article&id=6120:oms-afirma-que-covid-19-e-agora-caracterizada-como-pandemia&Itemid=812
6. World Health Organization (HWO). WHO Coronavirus Disease (COVID-19) Dashboard. World Health Organization. [Internet]. 2020 Jul [cited 2020 Jul 22]. Available from: https://covid19.who.int/
7. Ministério da Saúde (BR). Painel de casos de doença pelo coronavírus 2019 (COVID-19) no Brasil pelo Ministério da Saúde. Brasília: Ministério da Saúde [Internet]. 2020 Jul [citado 2020 Set 10]. Disponível em: https://covid.saude.gov.br/
8. Governo do Estado do Paraná. Coronavírus (COVID-19): informe epidemiológico. Secretaria da Saúde [Internet]. 2020 Jul [citado 2020 Set 10]. Disponível em: https://www.saude.pr.gov.br/sites/default/arquivos_restritos/files/documento/2020-09/INFORME_EPIDEMIOLOGICO_10_09_2020.pdf
9. Prefeitura do Município de Maringá. Boletim Online COVID-19. Secretaria Municipal de Saúde [Internet]. 2020 Jul [citado 2020 Set 10]. Disponível em: https://notificasaude.com.br/
10. Organização Pan-Americana da Saúde no Brasil (OPAS/OMS Brasil). Considerações para o ajuste de medidas sociais e de saúde pública no contexto da COVID-19: orientação provisória, 16 de abril de 2020. Organização Pan-Americana da Saúde. [Internet]. 2020 Abr [citado 2020 Jul 28]. Disponível em: https://iris.paho.org/handle/10665.2/52179
11. Ministério da Saúde (BR). Plano de Contingência Nacional para infecção Humana pelo novo Coronavírus COVID-19. Brasília: Ministério da Saúde [Internet]. 2020 Fev [citado 2020 Jul 28]. Disponível em: https://portalarquivos2.saude.gov.br/images/pdf/2020/marco/25/Livreto-Plano-de-Contingencia-5-Corona2020-210x297-16mar.pdf
12. Ministério da Saúde (BR). Redes Sociais. Brasília: Ministério da Saúde [Internet]. 2019 Nov [citado 2020 Jul 29]. Disponível em: https://www.saude.gov.br/redes-sociais
13. Governo Federal. Coronavírus – SUS. [Internet]. 2020 Abr [citado 2020 Jul 29]. Disponível em: https://www.gov.br/pt-br/apps/coronavirus-sus
14. Ministério da Saúde (BR). Medidas não farmacológicas. [Internet]. [citado 2020 Jul 29]. Disponível em: https://coronavirus.saude.gov.br/medidas-nao-farmacologicas
15. Prefeitura do Município de Maringá. Fiscalização recebeu 581 denúncias no final de semana. [Internet]. 2020 Jul [citado 2020 Jul 29]. Disponível em: http://www2.maringa.pr.gov.br/site/index.php?sessao=4ebb226525554e&id=36660
16. Prefeitura do Município de Maringá. Fiscais e policiais são desafiados e recebidos com ofensas e gestos obscenos. [Internet]. 2020 Abr [citado 2020 Jul 29]. Disponível em: http://www2.maringa.pr.gov.br/site/index.php?sessao=3c15a5abeb553c&id=36207
17. Prefeitura do Município de Maringá. Decretos Municipais. [Internet]. 2020 [citado 2020 Jul 29]. Disponível em: https://insta.am/Decretosmunicipais
18. Associação dos Municípios do Setentrião Paranaense (AMUSEP). Municípios. [Internet]. [Citado 2020 Jul 29]. Disponível em: http://www.amusep.com.br/site/municipios
19. Costa BRL. Bola de Neve Virtual: O Uso das Redes Sociais Virtuais no Processo de Coleta de Dados de uma Pesquisa Científica. RIGS revista interdisciplinar de gestão social [Internet]. 2018 Abr [citado 2020 Jul 29]. 7(1), 15-37. Disponível em: https://portalseer.ufba.br/index.php/rigs/article/view/24649/16131
20. Bavel JJV, Baicker K, Boggio PS, Capraro V, Cichocka A, Cikara M, et al. Using social and behavioural Science to support COVID-19 pandemic response. Nat Hum Behav [Internet]. 2020 Apr [cited 2020 Jul 21]; 4:460-471. DOI: 10.1038/s41562-020-0884-z. Available from: https://www.nature.com/articles/s41562-020-0884-z#citeas
21. Ministério da Saúde (BR). Ministério da Saúde lança canal para atender população no *WhatsApp*. Brasília: Ministério da Saúde [Internet]. 2020 Mar [citado 2020 Jul 22]. Disponível em: https://www.saude.gov.br/noticias/agencia-saude/46607-ministerio-da-saude-lanca-canal-para-atender-populacao-no-whatsapp

22. Krause NM, Freiling I, Beets Becca, Brossard D. Fact-checking as risk communication: the multilayered risk of misinformation in times of COVID-19. Journal of Risk Research [Internet]. 2020 Apr [cited 2020 Jul 28]; 1-8. DOI: 10.1080/13669877.2020.1756385. Available from: https://www.tandfonline.com/doi/full/10.1080/13669877.2020.1756385?src=recsys
23. Wong CML, Jensen O. The paradox of trust: perceived risk and public compliance during the COVID-19 pandemic in Singapore. Journal of Risk Research [Internet]. 2020 Apr [cited 2020 Jul 28]; 1-10. DOI: 10.1080/13669877.2020.1756386. Available from: https://www.tandfonline.com/doi/full/10.1080/13669877.2020.1756386?src=recsys
24. Organização Pan-Americana da Saúde (OPAS). COVID-19: Materiais de comunicação. Organização Pan-Americana da Saúde. [Internet]. 2020 [citado 2020 Jul 23]. Disponível em: https://www.paho.org/bra/index.php?option=com_content&view=article&id=6130:covid-19-materiais-de-comunicacao&Itemid=0
25. Faria MGA, Fonseca CSG. Pandemia de COVID-19 e de desinformação: um panorama do Brasil. Glob Acad Nurs. 2020;1(1):e1. https://dx.doi.org/10.5935/2675-5602.20200001
26. Aven T, Bouder F. The COVID-19 pandemic: how can risk science help? Journal of Risk Research [Internet]. 2020 Apr [cited 2020 Jul 28]; 1-6. DOI: 10.1080/13669877.2020.1756383. Available from: https://www.tandfonline.com/doi/full/10.1080/13669877.2020.1756383?src=recsys
27. Dryhurst S, et al. Risk perceptions of COVID-19 around the world. Journal of Risk Research [Internet]. 2020 May [cited 2020 Jul 21]; 1-13. DOI: 10.1080/13669877.2020.1758193. Available from: https://www.tandfonline.com/doi/full/10.1080/13669877.2020.1758193
28. Wise T, Zbozinek TD, Michelini G, Hagan CC, mobbs dean. Changes in risk perception and protective behavior during the first week of the COVID-19 pandemic in the United States. PsyArXiv [Internet]. 2020 Mar [cited 2020 Jul 21]. DOI: 10.31234/osf.io/dz428. Available from: https://psyarxiv.com/dz428/