




















Original Article

Knowledge, behavior and practices of the population during the pandemic against the transmission of SARS-CoV-2 in the state of Alagoas, Brazil

Conhecimento, atitudes e práticas de usuários de redes sociais durante o isolamento social para evitar a transmissão do coronavírus SARS-CoV-2 no estado de Alagoas, Nordeste, Brasil

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Abstract

The World Health Organization (WHO) declared an international state of emergency in order to contain the rapid spread of COVID-19. To ensure that there is adherence to preventive measures by the population aimed at controlling the pandemic in Alagoas, it is expected that knowledge, behavior and practices play an important role in preventing and controlling the disease. In this sense, it becomes relevant to understand the knowledge of the population about the disease. To evaluate the knowledge, behavior and practices of social media users during social isolation to prevent the transmission of the SARS-CoV-2 in the state of Alagoas, Northeast, Brazil. A probabilistic sample was carried out across the entire territory of the state of Alagoas with those who have access to a device that accesses the internet and a cross-sectional study was carried out using an online questionnaire applied to a convenience sample, recruited between August 2021 and July 2022 by snowball sampling. The questionnaire consisted of seven sessions, the first collecting data on the socioeconomic and sociodemographic profile of the participants, and the other sessions involving knowledge, attitudes and practices, including topics related to the vaccination that had to be administered at that time. High popular knowledge about signs and symptoms, means of transmission and risk groups. Low knowledge about seeking health services. Based on the results obtained, information from official channels became relevant to better teach the population in order to reduce the impact of COVID-19.

Keywords: infection, COVID-19, prevalence.

Resumo

A Organização Mundial da Saúde (OMS) declarou um estado de emergência de caráter internacional, a fim de conter o rápido avanço da COVID-19. Para garantir que haja aderência às medidas preventivas pela população visando o controle da pandemia, em Alagoas, espera-se que conhecimentos, atitudes e práticas desempenhem um papel importante na prevenção e controle da doença, nesse sentido, torna-se relevante entender o saber da população acerca da doença. Avaliar o conhecimento, atitudes e práticas de usuários de redes sociais durante o isolamento social para evitar a transmissão do coronavírus SARS-CoV-2 no estado de Alagoas, Nordeste, Brasil. Foi realizada uma amostra probabilística em todo o território do estado de Alagoas com aqueles que possuem acesso a algum dispositivo que acesse a internet e realizado um Estudo transversal através de um questionário online aplicado em amostra de conveniência, recrutada entre agosto de 2021 e julho de 2022 por snowball sampling. O questionário consistia em sete sessões, a primeira coletando dados sobre o perfil socioeconômico e sociodemográfico dos participantes, e as demais sessões envolvendo conhecimentos, atitudes e práticas, incluindo tópicos relacionados à vacinação que havia de ser administrada naquele momento. Alto conhecimento popular sobre os sinais e sintomas,

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meios de transmissão e grupos de risco. Baixo conhecimento sobre procurar o serviço de saúde. A partir dos resultados obtidos tornou-se relevante as informações por órgãos oficiais para melhor conhecimento da população a fim de reduzir o impacto da COVID-19.

Palavras-chave: infecção, COVID-19, prevalência.

1. Introduction

Coronavirus 19 (SARS-CoV-2) initially emerged in December 2019 in Wuhan, China. The disease, characterized by a respiratory infection, was named Coronavirus Disease-19 (COVID-19). Its symptoms such as fever, dry cough, fatigue and shortness of breath (dyspnea) can lead the patient to a more serious state of the disease, making it necessary to use mechanical ventilation devices on these patients, serving as a gateway to other secondary diseases and leading to death (Zhong et al., 2020).

Faced with this scenario, the World Health Organization (WHO) declared an international state of emergency by the end of January 2020, in order to contain the rapid spread of the disease. As of June 2020, 9,015,582 cases had been confirmed worldwide; 1,083,341 in Brazil, and 28,657 in the state of Alagoas (CRC, 2020), still characterizing the disease and its transmission as a pandemic. When this term was announced, it raised many concerns amongst national leaders around the world; initiating drastic preventive measures in several countries that had never been taken before (Hu et al., 2020).

The most severe prevention measures taken by countries such as Italy and Spain were announced weeks after the first cases popped up in the country, which caused a massive overload of the health system, and an increase in mortality from the disease caused by SARS-CoV-2 (Signorelli et al., 2020; ECDC, 2020). These preventive measures range from social distancing (a measure taken by all countries around the world) to the most severe lockdown, first implemented in Hubei province, China, but rapidly adopted by other countries such as India (Zhong et al., 2020).

The fight against COVID-19 is still a global concern, and to ensure that in the end there is success against the disease, adherence to preventive measures by the population is the key factor that contributes on a larger scale to the effectiveness of controlling the pandemic. However, this adherence has the following variables: knowledge, behavior and practices taken by the general population regarding the COVID-19 pandemic (Zhong et al., 2020).

When there is an outbreak of an epidemic and it spreads, one must look at the context of the population where the epidemic originated, due to the social drama to which the affected society is subjected. The outbreak can be divided into 3 major phases: the first occurs when the population realizes that something in the health sector is happening, but ignores the signs; The second is due to the increase in the number of deaths, reluctantly recognizing the outbreak, acting mechanically, guided by moral precepts. And the last stage, very dependent on the previous one, where the population reacts to what is happening with demand and need of explanations regarding the epidemic. This third stage is when the population actually takes preventive measures to end the spreading scenario (Jones, 2020).

In order to facilitate the management of the epidemic generated by COVID-19 in Alagoas, there is an urgent need to

understand the population's knowledge about the disease, in which hundreds of people are infected every day around the world. Due to the complexity and extent of this issue, it is important to carry out epidemiological studies through surveys of large population samples, clarifying previously unknown aspects, thus contributing to the improvement of prevention policies for SARS-CoV-2 infection. Therefore, this work aimed to evaluate the knowledge, behavior and practices of online users during social isolation to prevent the transmission of the SARS-CoV-2 coronavirus in the state of Alagoas, Northeast, Brazil.

2. Methodology

This is a descriptive, quantitative, cross-sectional study carried out at the Centro Universitário Cesmac, in Maceió, Alagoas. The research aims to gather data among the population of Alagoas, more specifically among the population that has some digital equipment with access to the internet.

A probabilistic sample will be made with an estimated total population of 3,337,357 (IBGE, 2019), which encompasses the entire territory of the state of Alagoas. The technique consists of selecting a sample of the population that is accessible, in this case, those over 18 years of age, with access to a device that accesses the internet; The sample size will be calculated based on a confidence level of 95%, power of 80%, proportion of 4 unexposed and 6 exposed, estimated prevalence of 20% of outcomes, expected frequency in unexposed patients of 12.5% and, Ratio of Prevalence (RP) of 2, resulting in a minimum number of 386 participants.

The electronic questionnaire was prepared by the authors, on the Google Forms® platform, previously tested. Specific aspects on the topic were evaluated based on information made available by the Ministry of Health. All participants will be invited via social media. In addition, the link to take part in the research will be distributed in the study team's Whatsapp group and disseminated among their personal networks. Through Instagram, by posting an invitation and accessing the research link in the BIO of the entire research team, Telegram, in addition to sending emails. This way, the collection of information will benefit from social networks, and progressively expanding potential of contacts. The approach, similar to the "snowball" recruitment procedure, will be adopted in an exponential, non-discriminatory manner, that is, in such a way that any participant will have the option of recommending the questionnaire to other people in their network of contacts.

The Free and Informed Consent Form (FICF) will be the first part viewed when opening the link sent to access the questionnaire for reading and understanding the research objectives and collecting consent from respondents if they

click on the “Accept” option in the FICF. The person will be able to read the FICF, ask questions via telephone and email provided in the header preceding the FICF, and agree or not to participate. If one selects the “I Accept” option, access to the entire questionnaire will be granted. You will be asked to save the FICF and informed that this procedure is necessary because after answering the questionnaire, the FICF and the questionnaire will no longer be visible. All questions are multiple choice, that is, with alternative answers to select just one option. The questionnaire will consist of 7 blocks: block 1 - socioeconomic and sociodemographic profile, block 2 - Questions regarding social isolation and its impact on people’s lives, block 3 - Questions regarding the practice and behavior of the population regarding prevention and control of COVID-19, block 4- Questions regarding the epidemiology of SARS-CoV-2/COVID-19, block 5- Question regarding sources of information about SARS-CoV-2/COVID-19. Alagoas, 2021, block 6- Question regarding transmission of SARS-CoV-2/COVID-19. Alagoas, 2021, block 7 - Question regarding vaccination against COVID-19.

Regarding sociodemographic characteristics, questions will range from gender, age, skin color, education, occupation, whether the respondent is a student or health professional, to the number of people and elderly people in the household.

Health and behavior will be assessed based on self-perception of health, whether one is part of the risk group (considered as positive when there is at least one affirmative response to a medical diagnosis referred to as systemic arterial hypertension, diabetes mellitus, cancer, kidney, heart, respiratory or other disease). Chronic illness or, being 60 years of age or older, presence of at least one of the five main signs/symptoms in the last week (cough, sore throat, runny nose, dyspnea/shortness of breath and fever, flu vaccination status this year, smoking and knowledge about being part of the risk group (answer to the question about being in the risk group or not, excluding those who could not answer). Regarding the implementation of preventive measures in the current routine, participants who responded affirmatively to at least 8 of the following 9 recommendations: wash your hands with soap and water, several times a day; clean your hands with alcohol gel, several times a day; when coughing or sneezing, cover your nose and mouth with a tissue or your arm, instead of your hands; do not touch your eyes, nose and mouth without washing your hands; do not share personal objects, such as cutlery, towels, plates and glasses; avoids crowds; keep environments ventilated; sanitize cell phones and; wear a mask when leaving home.

Knowledge about SARS-CoV-2/COVID-19 will be assessed from different aspects: a) signs and symptoms and b) when to seek medical services, with response options for both: cough, sore throat, runny nose, dyspnea /shortness of breath, headache, myalgia, fever, nasal congestion, hyposmia/anosmia and hypogeusia/ageusia, tiredness and diarrhea; c) forms of transmission (droplets of saliva, sneeze, cough, touching or shaking hands, hugging, kissing, sexual intercourse, feces, urine, animals, insects, contaminated objects or surfaces and

d) who is part of the risk group (patients with systemic arterial hypertension, diabetes mellitus, cancer, kidney, heart, respiratory disease or other chronic disease or even, 60 years of age or older. They were also asked about knowledge about vaccines and treatment (exists, does not exist, does not know) and about the source of information used for science and updates about the virus (television programs, radio, printed newspaper, social networks, video platforms, friends/neighbors, family, colleagues/workplace, school/college, health professionals/services, scientific articles, websites, don’t remember/don’t usually update themselves on the subject).

In this study, four outcomes will be analyzed, defined based on different aspects of the population’s knowledge about SARS-CoV-2/COVID-19: a) signs and symptoms (yes or no, with positive mention of cough, sore throat, runny nose, dyspnea/respiratory effort and fever); b) when to seek the health service (yes or no, with positive references to cough, dyspnea/breathing effort and fever); c) forms of transmission (yes or no, those who responded to droplets of saliva, sneeze, cough, touching or shaking hands and contaminated objects or surfaces are considered positive) and; d) who is part of the risk group (yes or no, assumed as positive 7 or 8 affirmative answers for people with systemic arterial hypertension, diabetes mellitus, cancer, kidney, heart, respiratory disease or other chronic disease or even, 60 years old or older).

The data collection instrument was built on Google® Forms platform and disseminated via the internet, through applications and social networks: WhatsApp, Instagram, E-mail and Telegram between the months of August 2021 and July 2022. In total, the aim is to obtain answers of internet users, to use a sample of participants for subsequent submission to analysis.

3. Results

The sample was made up of 864 unique responses in which an individual agreed to the FICF, with 71.8% of respondents (620) being female, aged between 18 and 25 years old corresponding to 59.7% (516) of the responses; however, there was a lower frequency among individuals between 31 and 35 years old with 6% (52) responses; residents of the municipality of Maceió made up 81.5% (704), with 36.6% (316) completing secondary education. Of the participants, 31.4% (272) have a monthly income between 1 and 2 minimum wages, and only 12% (104) have an income greater than 8 minimum wages; a total of 20% (173) chose not to answer the question about salary income. 35.9% (310) reported currently living with 3 other people in their household and 59.5% (514) have some type of health insurance; 24.8% (214) depend solely on the Unified Health System. Furthermore, 64.4% (556) reported not being in the health sector professionally as shown in Table 1.

In relation to social isolation and its impact on the lives of those interviewed, 37.2% (323) stated that they left their houses to have some leisure time, while 2.8% (24) reported that they did not leave home to carry out any type of activity. On the other hand, 80.1% (692) of those interviewed have a

Table 1. Questions regarding socioeconomic and sociodemographic profile (n=864).

Variables	n	%
Gender		
Male	244	28.2
Female	620	71.8
Age		
18-25	516	59.7
26-30	116	9.5
31-35	52	6
36-40	72	8.3
> 40	108	16.5
Municipality		
Maceió	704	81,5
Countryside	160	18.5
Education		
High school	316	36.6
University	312	36.1
Postgraduate	216	25
Income		
1 minimum wage	136	15.7
1-2 minimum wages	136	15.7
2-5 minimum wages	204	23.6
5-8 minimum wages	112	13
> 8 minimum wages	104	12
Number of people in the household		
1 person	64	7.4
2 people	153	17.6
3 people	310	35.9
4 people	197	22.8
5 people	116	13.4
6 people	16	1.9
7 people	4	0.5
> 8	4	0.5
Type of health care used		
Health insurance	514	59.5
Unified Health System	214	24.8
Private	114	13.3
Health worker		
Yes	300	34.7
No	556	64.4

positive self-perception about social isolation contributing to the reduction in the number of victims, and only 7.4% (64) responded that there is no reduction in the number of victims of COVID-19 in case of social isolation; as seen in Table 2.

Table 2. Questions regarding social isolation and its impact on people's lives (n=864).

Variables	n	%
To be isolated or not		
Does not leave the house for any task	24	2.8
I do leave the house to buy food and/or medicine	200	23.2
I leave home to work	258	29.9
I leave the house to have some leisure time	323	37.2
Self-perception about social isolation		
Reduces the number of victims of COVID-19	692	80.1
I am not sure if it reduces the number of victims	100	11.6
Does not reduce the number of victims	64	7.4
Self-perception of impact on life		
Social life greatly affected by isolation	164	19
Income greatly affected by isolation	77	9
Health (physical and mental) was affected by isolation	346	40
Other characteristics were affected by isolation	86	10
No impact	173	20
Impact of isolation on income		
Did not impact income	294	34
Encouraged to save money	294	34
Not spending money	60	7
Stopped making money	112	13

Of those interviewed, 40% (346) say they had their physical or mental health affected by isolation, and the least significant was financial, with only 9% (77) of those interviewed stating some negative change. 13% (116) of respondents report having stopped earning money during social isolation, and 34% (294) have not had their monthly family income impacted in any way.

Regarding the prevalence of knowledge about the health service to be sought in case of mild symptoms of COVID-19, 51% (440) responded that they should stay at home, in addition, 87.5% (759) understood that it should be carried out preventive measures, whereas 9% (84) believe that preventive measures should not be carried out; Of the total, 21 individuals (3.5%) preferred not to respond, as shown below in Table 3.

Respondents' perception regarding the SARS-CoV-2 clinical symptoms was distributed very variably, while 94% (828) stated "Cough" was a symptom, 22% (184) responded that "Nasal Congestion" was not a symptom of the disease; as well as 58% (504) believe that "Eye pain" could be a symptom of COVID-19; duly presented in Table 4.

Table 3. Questions regarding the practice and attitudes of the population regarding the prevention and control of COVID-19 (n=864).

Variables	n	%
Carried out preventive measures		
Yes	759	87.5
No	84	9
Knowledge about the health service to be sought if mild symptoms		
Family health center	76	9
Emergency	168	19
Hospital	160	19
Stay at home	440	51

4. Discussion

In this research, the majority of participants demonstrated that they understood that prevention measures should be carried out, for the most part, perhaps influenced by television advertisements and social media with great influence in the country. In this article, 759 (87.5%) of the interviewees responded that they carried out preventive measures, corroborating TRIBINO et al., 2021; who obtained a similar number in their studies, with 477 (75%) adhering to prevention measures.

Still on questions regarding the practice and attitudes of the population about the prevention and control of COVID-19, when asked about their knowledge about the health service to be sought in case of mild symptoms, the majority (51%) responded that they should stay at home, unlike studies by Tribino et al. (2021), where the prevalence of participants' understanding of when to seek a health service was low.

In this sense, it is possible to observe that loss of smell/taste and intense tiredness were the most common symptoms evidenced by 876 (99%) of the studied population. Secondly, fever and difficulty breathing 848 (98%) were the most preponderant symptoms. These data contrast with the knowledge of the European and North American population, where 85.0% of individuals indicate positive knowledge about the triad of symptoms (Amaral et al., 2022).

Consistent with the study by Mesenburg et al. (2021), the symptoms that had the highest prevalence ratio between antibody carriers and non-carriers were changes in smell and/or taste, fever, tremors and difficulty breathing. On the other hand, the least common symptoms found were eye pain 504 (58%), followed by nasal congestion 672 (78%) and runny nose 688 (80%). Furthermore, the other symptoms that were also considered relevant were: cough, sore throat, headache, body pain and diarrhea, which approximately 90% of participants reported being present.

The principle used to adopt the social distancing proposed by public health authorities is the attempt to reduce the transmission of COVID-19. However, the impact of this measure in the population's daily life has a negative impact on interpersonal relationships.

Table 4. Questions regarding the SARS-CoV-2/COVID-19 clinic (n=864).

Signs and symptoms	n	%
Cough		
Yes	828	94
No	36	6
Sore throat		
Yes	748	87
No	116	13
Runny nose		
Yes	688	80
No	176	20
Shortness of breath		
Yes	848	98
No	8	2
Headache		
Yes	800	93
No	64	7
Body ache		
Yes	736	85
No	132	15
Fever		
Yes	848	98
No	32	2
Nasal obstruction		
Yes	672	78
No	184	22
Loss of smell/ taste		
Yes	876	99
I would rather not answer	8	1
Fatigue		
Yes	852	99
No	20	1
Diarrhea		
Yes	716	85
No	128	15
Eye pain		
Yes	504	58
No	360	42

Therefore, it is clear that the population is aware that the protective measure is effective and contributes to reducing the transmission rate of the disease. On the other hand, the negative effects of maintaining social isolation impact the mental, physical and financial health of society (Al-Dmour et al., 2020).

Regarding the psychological aspect, it is possible to consider that the dynamization of information

through digital platforms played a significant role in the deterioration of the emotional state of individuals. The amount of data, information and veracity of facts associated with the progression of COVID-19 may be associated with an increased level of anxiety and emotional stress developed by the population. Considering the discoveries about the disease and the fight against the spread of the pathology, stressful symptoms are expressed more frequently, considering that each individual faces a specific moment in rationalizing the pandemic and how they will interpret the information received. Based on this principle, the use of information dissemination vehicles has a positive role when they are used to share information that helps to protect oneself from the disease and guide the search for specialized health services when necessary (Rodríguez-Fernández et al., 2021).

In light of the study by Thomas et al. (2021) currently, as most of the population has a mobile device, one of the global initiatives seeks to contain the pandemic through the use of this resource. These devices are integrated with other technologies to facilitate solutions and minimize the transmissibility of Sars-Cov-2. However, it is seen that psychological impacts are a cause of intense concern, mainly anxiety and depression and self-reported stress. Therefore, the objective of the therapeutic path found in the use of technologies proved to be beneficial for controlling mental problems caused by social isolation.

In the understanding of the study proposed by Shah et al. (2020), the loneliness resulting from social isolation due to the Covid-19 pandemic has altered social connections, and with this, it brought new forms of virtual opportunities. However, people with a low socioeconomic status and high vulnerability are at greater risk of clinical symptoms, such as: frustration, boredom, fear, sadness and nervousness. Thus, it is notable that limited access to health and psychological support as well as low social interaction increased the morbidity and mortality of individuals. Therefore, there is a clear discrepancy when comparing people who have a socially active lifestyle and those who do not interact with each other.

5. Conclusion

It was observed that the participants' perception regarding social isolation as a prophylactic measure for the pandemic varies depending on socioeconomic factors, however, the majority believe that it is the most important control measure and are willing to wait as long as necessary to contribute to the control of COVID-19. It can also be observed that the pandemic contributed in a large scale to the development of psychological disorders on previously healthy individuals, as well as worsening those who were previously already diagnosed with mental health disorders.

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