




ORIGINAL


**Anxiety due to the SARS-CoV-2 pandemic: analysis of YouTube™ videos**

Ansiedade devido à pandemia pelo SARS-CoV-2: análise de vídeos do YouTube™  
Ansiedade devido à pandemia pelo SARS-CoV-2: análise de vídeos do YouTube™


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**ABSTRACT**

**Objective:** To analyze the contents about anxiety due to the SARS-CoV-2 pandemic available in the YouTube™ platform. **Methods:** This is a cross-sectional and analytical study conducted with 404 videos from the YouTube™ platform, resorting to productions offering free access to *premium* content non-subscribers. The sampling type used was sequential non-probabilistic. Fisher's Exact and Pearson's Chi-square tests were employed for the analysis. **Results:** The videos especially contemplate anxiety due to COVID-19 (48%). There was a significant association between characterization and type of channel ( $p<0.001$ ), characterization and subtopics ( $p=0.021$ ) and characterization and characters ( $p<0.001$ ). **Conclusion:** Most of the videos were average in length, included human characters and, especially, the topic of "anxiety due to COVID-19". In relation to references, most of the videos did not include this information. **Descriptors:** Anxiety. COVID-19. Pandemics. Access to Information. Coronavirus.

**RESUMO**

**Objetivo:** Analisar os conteúdos disponíveis na plataforma YouTube™ acerca da ansiedade devido à pandemia pelo SARS-CoV-2. **Métodos:** Trata-se de um estudo transversal e analítico, com 404 vídeos da Plataforma YouTube™, utilizando-se das produções com acesso livre aos não assinantes dos conteúdos *premium*. O tipo de amostragem utilizada foi a não probabilística em sequência. Utilizaram-se os testes Exato de Fischer e Qui-quadrado de Pearson para análise. **Resultados:** Os vídeos contemplam, sobretudo, ansiedade pela COVID-19 (48%). Houve associação significativa entre caracterização e tipo de canal ( $p<0,001$ ), caracterização e subtemas ( $p=0,021$ ) e caracterização e os personagens ( $p<0,001$ ). **Conclusão:** A maior parte dos vídeos foi de duração intermediária, com personagens humanos e sobre o subtema "ansiedade pela COVID-19". Em relação às referências, a maior parte dos vídeos não continha essa informação. **Descritores:** Ansiedade. COVID-19. Pandemias. Acesso à Informação. Coronavírus.

**RESUMÉN**

**Objetivo:** Analizar los contenidos disponibles en la plataforma YouTube™ acerca de la ansiedad debido a la pandemia de SARS-CoV-2. **Métodos:** Estudio transversal y analítico realizado con 404 videos de la Plataforma YouTube™, recurriendo a producciones de acceso libre a los no suscriptores a los contenidos *premium*. El tipo de muestreo empleado fue no probabilístico y secuencial. Se utilizaron las pruebas Exacta de Fisher y Chi-cuadrado de Pearson para el análisis. **Resultados:** Los videos incluyen especialmente la ansiedad debido al COVID-19 (48%). Se registró una asociación significativa entre caracterización y tipo de canal ( $p<0,001$ ), como así también entre caracterización y subtemas ( $p=0,021$ ) y entre caracterización y los personajes ( $p<0,001$ ). **Conclusión:** La mayor parte de los videos tuvo duración promedio, incluyó personajes humanos y trataba el subtema "ansiedad debido al COVID-19". En relación con las referencias, la mayoría de los videos no contenía esa información. **Descritores:** Ansiedad. COVID-19. Pandemias. Acceso a la información. Coronavirus.

## INTRODUCTION

Viral infections have always been studied and researched; however, in recent years and due to control of the emergence of new viruses and because there are already many complex diseases with vaccines, medications and treatments already developed, there has been a decrease in the number of these studies. In turn, infection by SARS-CoV-2 (COVID-19) had its outbreak at the end of 2019. The first cases were confirmed in China and were later spread around the world. In March 2020, the World Health Organization (WHO) declared the situation as a pandemic, whose result has involved loss of human lives, as well as feelings of anguish and anxiety.<sup>(1)</sup>

The aforementioned disease imposes short- and long-term sequelae in different degrees of complexity for each person, with respiratory difficulty as one of the main symptoms.<sup>(2)</sup> Health organizations began to research more and more to acquire knowledge about the virus, in order to recognize how the disease is acquired, the restrictive measures necessary to control its spread, and the treatment for infected people.<sup>(3)</sup>

In this sense, the virus imposed a significant demand for health services, generating work overload in many professionals and a situation marked by stress and high tension. Fear towards the virus, direct visualization of overcrowding in the health system, knowledge of the patients' symptoms, and the fear of spreading the disease to family members and friends have generated deep anxiety in the population, which renders many individuals unable to perform tasks.<sup>(4)</sup>

The repercussions of the disease derived in the need for social distancing, isolation and mask use. Given the uncertainties generated by COVID-19, feeling such as fear and frustrations emerged in people, as well as an anxious state which varied from mild to moderate or intense.<sup>(2)</sup>

Due to the pandemic, anxiety disorders result in relevant harms to society. These disorders include and share characteristics marked by fear to an immediate response and the corresponding anxiety towards anticipation of a future threat. Long- and short-term harms were observed, such as impaired memory, sleep disorders, increased stress levels, depression and post-traumatic stress symptoms.<sup>(5)</sup>

It should be noted that anxiety symptoms can be something positive when they do not lead to functional losses and mental distress, as anxiety is capable of generating behavioral actions that benefit people, such as running away from a dangerous situation. However, when the anxious symptomatology is intense, resulting in psychosomatic consequences and disturbing a person's life and routine, an immediate intervention must be implemented in order to bring about an improvement of that condition.<sup>(6)</sup>

Therefore, anxiety refers to a set of disorders characterized by fear and apprehension of an imminent or future situation, about which the individual is not always able to define the cause, which can generate social and mental harms, affecting concentration, thoughts and social life. The manifestations are both physical and psychological,

Anxiety due to the SARS-CoV-2 pandemic.. such as tachycardia, respiratory discomfort, nausea, cephalgia, excessive negative thoughts, concern and fear.<sup>(7)</sup>

In addition, given the pandemic as something new, unknown and uncertain, digital platforms contributed technology use as a learning tool for the population. Technology often resorts to apps, videos, journals and booklets for updates on the topic of anxiety. However, it is noted that transmission of this diverse information can be fake and lack scientific basis, corroborating with deterioration in the population stress and anxiety levels.<sup>(1)</sup>

The YouTube™ digital platform is a tool that is oftentimes used in this technological era, as it offers easy and fast access to information, with the possibility of being used to expand knowledge. In addition to that, it allows the same video to be played several times or even downloaded.<sup>(8)</sup> Considering the pandemic as something new and compared to the year in which it emerged, in this context the number of available videos related to anxiety is high, with a large number of views being perceived and evidencing, since then, the importance of the subject matter for society.

Given this scenario, the general objective of this research consists in analyzing the contents about anxiety due to the SARS-CoV-2 pandemic available in the YouTube™ platform.

## METHODS

This is a cross-sectional and analytical study conducted in the YouTube™ platform (<https://www.youtube.com>), which resorted to videos that offer free access to *premium* content subscribers. The platform offers free use, with diverse information and rich in content, offering long and short videos. In addition, it includes "Likes" and "Dislikes" options, as well as for comments, live streaming, content sharing and subscriptions to channels. However, in order to access all this information, the video sharing platform requires login. It is also possible to verify the number of views of given video, in addition to the possibility of seeing it again as many times the user wishes to.

The population consisted of the total of shared/disclosed videos, having as topic the diverse information about anxiety due to the SARS-CoV-2 pandemic available in the YouTube™ platform. The sampling type used was sequential and non-probabilistic. Consequently, it was not necessary to resort to statistical methods to select the videos, as they were chosen in accordance with the inclusion criteria defined.<sup>(9)</sup>

Videos that addressed anxiety during the pandemic period were included and those that were not in Portuguese, lives, podcasts, advertisements, events that portray episodes of anxiety and videos that did not contain all the study variables (listed below) were excluded. It is noted that duplicate videos were counted only once; therefore, there repetitions were excluded.

For data extraction, an instrument specifically developed for this study was used, which has nine variables: type of channel (personal or institutional); year of posting; number of subscribers; video length

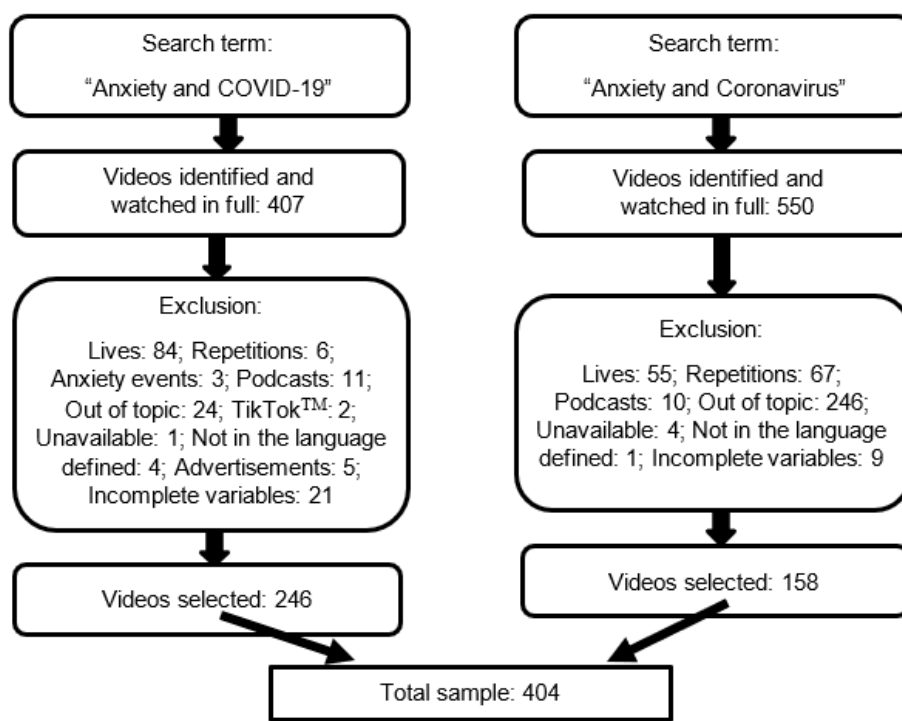
in minutes; characterization (short, average-length or long, according to YouTube™ criteria); number of views; number of “likes”; number of “dislikes”; and video subtopics. Due to the need for instrumentalizing qualitative analyses, it was decided not to include the comments made in the channels.

Data collection took place in July 2021 by accessing the platform and using the following terms: “anxiety and coronavirus” and “anxiety and COVID-19”. The search was organized by means of preparing

Anxiety due to the SARS-CoV-2 pandemic.. a list with the links to the videos found for a subsequent analysis.

Selection of the videos in the platform was in charge of two researchers who worked individually and is presented in Figure 1. After collecting the sample, the findings were compared and the possible divergences were discussed. Eventually, 404 videos were obtained for the analysis.

**Figure 1.** Flowchart corresponding to selection of the YouTube™ videos with diverse information about COVID-19 and anxiety. Teresina, Piauí, Brazil, 2021.



Source: authors (2022).

The data were processed in the SPSS software, version 22. The variables were expressed using central tendency and dispersion measures, as well as by means of absolute and relative frequencies. Fisher's Exact and Pearson's Chi-square tests were used to verify associations between length of the videos and the categorical variables. The assessment regarding normality of the numerical variables was verified based on the Kolmogorov-Smirnov test and later analyzed by means of the Kruskal-Wallis test. 5% significance and a 95% confidence index were adopted for all the tests.

It is noted that the videos available in the platform offer free access to the population and that the study did not involve contacts of any nature with the characters presented in the videos or with the channel owners. Consequently, it is not necessary to submit the study to any Research Ethics Committee.

## RESULTS

Of the 404 videos included in the sample, 234 (57%) channels were personal and 170 (42.1%) were produced by institutions (mostly news agencies). Regarding the number of people subscribed to the channels, the median was 892 (minimum of 1 and maximum of 3,810,000). As for the year when the videos were posted, 347 (85.9%) were from 2020 and 57 videos (14.1%) from 2021.

In addition, referring to the length of the videos, it was verified that 226 (55.9%) were average in

length, lasting between 4 and 20 minutes, 140 (34.7%) were short, lasting less than 4 minutes, and 38 (9.4%) were long, lasting more than 20 minutes. As for the number of views, there was a median of 140 (minimum of 2 and maximum of 752,033), with a median number of likes of 12 (minimum of 0 and maximum of 17,000) and a median of 0 dislikes (minimum of 0 and maximum of 458).

When investigating the theme, “anxiety due to COVID-19” presented 194 videos (48%). Another subtopic that showed relevance was “anxiety control, treatment and prevention”, with 116 (28.7%) videos.

In relation to the type of characters, 382 videos (94.6%) were produced from capturing the image of real people, 16 (4.0%) from the image of a virtual character/avatar and 6 (1.5%) were in a reading format.

In Table 1, a significant association was verified between type of channel and length of the videos ( $p < 0.001$ ), with a higher frequency in the association between average-length videos and published on personal channels (66.4%).

In Table 2, a significant association was verified between length of the videos and the subtopics of the productions ( $p = 0.021$ ). There was also a higher percentage in the association between average-length videos and the subtopic regarding anxiety due to COVID-19 (53.5%).

In Table 3, a significant association was verified between length of the videos and the characters involved in them ( $p < 0.001$ ). The videos with humans,

**Table 1.** Association between characterization and type of channel of the videos about anxiety due to SARS-CoV-2. Teresina, Piauí, Brazil, 2021.

Type of Channel	Characterization			p-value
	Short (<4 min)	Average (4-20 min)	Long (>20 min)	
	N (%)	N (%)	N (%)	
				<0.001*
Personal	68 (48.6)	150 (66.4)	16 (42.1)	
Institutional	72 (51.4)	76 (33.6)	22 (57.9)	
Total	140 (100)	226 (55.9)	38 (9.4)	

\*Chi-Square Test  
Source: authors (2022).

**Table 2.** Association between characterization (length) and subtopics of the videos. Teresina, Piauí, Brazil, 2021.

Subtopics of the videos	Characterization			p-value
	Short (<4 min)	Average (4-20 min)	Long (>20 min)	
	N (%)	N (%)	N (%)	
				0.021*
Anxiety due to COVID-19	52 (37.1)	121 (53.5)	21 (55.3)	
Anxiety about the vaccine	3 (2.1)	1 (0.4)	0 (0.0)	
Control/Treatment/Prevention	45 (32.1)	60 (26.5)	11 (28.9)	
Emotional sequelae	8 (5.7)	7 (3.1)	0 (0.0)	
Case reports	1 (0.7)	4 (1.8)	1 (2.6)	
COVID or anxiety	17 (12.1)	15 (6.6)	0 (0.0)	
Anxiety in health professionals	2 (1.4)	3 (1.3)	0 (0.0)	
Anxiety in children	5 (3.6)	3 (1.3)	1 (2.6)	
Anxiety during pregnancy	0 (0.0)	2 (0.9)	1 (2.6)	
Religious side	2 (1.4)	2 (0.9)	1 (2.6)	
Mourning	0 (0.0)	0 (0.0)	2 (5.3)	
Nutrition and anxiety	3 (2.1)	3 (1.3)	0 (0.0)	
Anxiety in students	1 (0.7)	1 (0.4)	0 (0.0)	
Others	1 (0.7)	4 (1.8)	0 (0.0)	
Total	140 (100)	226 (100)	38 (100)	

\*Fisher's Exact Test  
Source: authors (2022).

**Table 3.** Association between characterization and characters in the videos and bibliographic sources. Teresina, Piauí, Brazil, 2021.

Variables	Characterization			p-value
	Short (<4 min)	Average (4-20 min)	Long (>20 min)	
	N (%)	N (%)	N (%)	
<b>Character</b>				<0.001**
Human	122 (87.1)	222 (98.2)	38 (100.0)	
Virtual/Avatar	12 (8.6)	4 (1.8)	0 (0.0)	
Reading	6 (4.3)	0 (0.0)	0 (0.0)	
<b>Bibliographic Source</b>				0.528**

Yes	1 (0.7)	2 (0.9)	1 (2.6)
No	139 (99.3)	224 (99.1)	37 (97.4)
Total	140 (100)	226 (100)	38 (100)

\*\*Fisher's Exact Test  
 Source: authors (2022).

## DISCUSSION

The study presented most of the videos published in personal channels (of physical persons), which is similar to the research developed on the platform involving the theme of male indwelling urinary catheterization.<sup>(10)</sup> Health-themed videos are published by people on private channels, in which they express their opinion, emphasize case reports, personal testimonies and their strategies for reversing the situation in the best possible way. In the personal channels, society's empathy towards the theme of mental illness was observed, as some authors used the YouTube™ tool as a blog to provide help to others in the face of such complex feelings.

On the other hand, the institutional channels had a smaller number of exposures on the theme, in which the news channels stood out. In them, videos taken from the news were observed in which they portrayed the advance of the pandemic. Social networks, in which the YouTube™ platform fits, stand out as a tool that allows users to review the news, which increases the number of views for the news released.<sup>(11)</sup>

Governmental institutions are bodies that must be at the forefront of the situation to try to solve the problem as quickly and safely as possible. However, on YouTube™, the scarcity of videos by governmental institutions points to a reduced dissemination of information from the authorities at this important and decisive moment for education in health.

A study developed in the United States identified that production of videos, as well as the quality and veracity of the message conveyed, is a concern among health professionals and organizations.<sup>(12)</sup> It is indispensable to have partnerships between teaching/research centers and health services for media productions, as the YouTube™ sharing platform is the most known/accessed.<sup>(13)</sup>

Regarding the year in which the videos were posted, a significant percentage was observed in 2020, which is similar to a study on videos in Libras for COVID-19.<sup>(14)</sup> It was identified that both themes are related to the COVID-19 pathology that emerged at the end of 2019 in China and spread around the world in early 2020, generating in people curiosity and apprehension in the face of the new event.<sup>(15)</sup> It was therefore found that the authors of the videos discussed the theme when it most afflicted the population, giving them the opportunity to acquire knowledge in the face of the unknown.

Control, treatment and prevention of anxiety during the pandemic period have been and continue to be much researched, as a large number of people are experiencing this stressful event. Videos on this topic have been produced for YouTube™, revealing the importance of prevention, control methods, coping strategies and symptoms of the disease. The research conducted on Internet after COVID-19

spread disclosing in the media, has become quite significant.<sup>(16)</sup> In this sense, the videos show that anxiety can be considered a common phenomenon and that, in some cases, it can become pathological and require interventions.

The pandemic brought about very traumatic consequences, especially for mental health, due to the uncertainties of the moment lived and the loneliness caused by social isolation. From this perspective, mental disorders have worsened considerably and have become risk factors for deterioration of the mental health situation in the country.<sup>(17)</sup>

By analyzing the "length of the videos" variable, it was observed that those with the most views are those classified as average-length and long, in which, possibly, more information is found. Regarding the number of views of the videos, great demand for health information was noticed on digital platforms, in which these videos can assist in self-care.<sup>(18)</sup> It is understood that, due to the pandemic, platforms such as YouTube™ have become a means for learning and information about the most varied topics, even anxiety, which can be a means of work for education in health. In this way, the professionals, especially those who make up the Nursing team, can convey concrete and evidence-based information, as well as guide the search for support in health care networks.

In relation to the number of views, it was similar to the results found in a research study whose objective was to analyze the content of videos supporting the physical activity among aged people in social isolation, available on YouTube™ during the COVID-19 pandemic.<sup>(19)</sup> Ease of access to the platform and the importance of the theme in the social isolation context in the face of the pandemic, given the consequent increase in anxiety symptoms, justify the high number of views.<sup>(20)</sup>

Regarding the number of Likes and Dislikes, it was found that the former was higher in the longer videos, which can then highlight an association between the number of Likes and Dislikes and length of the videos. In this way, it is possible to reassert that the YouTube™ platform consists of videos with the most diverse lengths and capable of providing more information.<sup>(21)</sup>

The number of videos with scientific references was reduced, taking into account that most of them were of a personal nature and considering that anyone can provide information, making this a worrying factor in relation to validation of the knowledge transmitted. It should be noted that, unfortunately, there are still many fake news on the Internet, responsible for disseminating false information. Thus, in the current scenario of the pandemic caused by the new coronavirus, it is noted that, just like the COVID-19 virus, there is parallel dissemination of various fake news, which can

generate harms due to the wrong information that reaches the population.<sup>(22)</sup>

The study obtained a statistically significant relationship between the “length” and “type of channel” variables, resulting in the population’s interest in not so long videos for information and learning on the theme. These videos are configured as average-length, with greater wealth of information when compared to short videos; therefore, they manage to address the topic more comprehensively and quickly.

There was a positive relationship between the “length” and “subtopics” variables, with emphasis on the videos with the subtopic of “anxiety due to COVID-19” with an average length, justified by the significant value of the theme and the predominance of the pathology in this crisis period.

Therefore, the relevance of the emotional aspects during epidemic processes is identified. With COVID-19, “coronaphobia” was established, so that there was an increase in the prevalence of depression and anxiety among individuals, revealing human beings’ psychological vulnerability.<sup>(1)</sup>

Another significant association observed was between length and characters. It was observed that most of the videos included real characters and were average in length. Thus, the need is verified for people to present diverse information on the topic of anxiety to their peers.

It is noted that the results of this study reinforce the importance of the YouTube™ platform as a means for information and study, being a source of knowledge for all. The videos are both explanatory and educational, which assists in health education.

The following are pointed out as limitations of this research: the statistical analysis does not allow evaluating the cause and effect relationship or which platform undergoes daily changes. The filtering resources are also scarce, which made it more difficult to collect data. An attempt was made to remedy these facts by means of a thorough analysis of the videos and double-checking, on different computers.

## CONCLUSION

From the analysis of the diverse information posted in YouTube™ on anxiety in the face of the COVID-19 pandemic, it was concluded that the personal channels were the most accessed and that the subtopic of “anxiety due to COVID-19” was the most addressed among the topics found. There was a correlation between characterization in terms of length and the “type of channel”, “subtopic” and “characters” variables. Most of the videos were average in length, inferring that from 4 to 20 minutes is ideal for a good presentation of the theme.

Videos with images of human beings explaining the topic represented the majority. Few videos including scientific references were observed, so that the scarcity of bibliographic sources is a limiting factor for analyzing the veracity of the information presented in these videos.

Thus, after analyzing the data, it was verified that the YouTube™ platform is a medium that is rich in information, although there is a need to use other

Anxiety due to the SARS-CoV-2 pandemic.. tools to verify its veracity since, in most of the videos, no theoretical-scientific framework is used.

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