Anxiety, Beliefs and Covid-19 in Two Periods of the Pandemic in Brazil: A comparative study

Ansiedad, creencias y Covid-19 en dos períodos de la pandemia en Brasil: un estudio comparativo

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Abstract

This research compared evocations regarding the term "coronavirus" during two different periods in the Covid-19 pandemic in Brazil in 2020 — March (beginning of the pandemic in the country) and June (Brazil as the epicenter of the pandemic) —, considering the presence or absence of anxiety symptoms in participants. The methodology adopted the free evocation technique and the Generalized Anxiety Disorder (GAD-2) symptom scale. The sample was composed of 5,961 women and 1,153 men. Participant selection was relegated to convenience sampling by means of an online questionnaire. Results showed that the coronavirus had differential impacts among the groups that were assessed and according to the time of data collection. In general, in March, people with anxiety symptoms had a more catastrophic view of the future, while people without those symptoms had a less unfavorable repertoire to adjust to the situation. In June, both groups reported a negative view of the scenario, indicating a decrease or exhaustion in their capacity for psychological adjustment. This suggests the possibility of an increase of some conditions that result in adaptive impairment, exhaustion, and mental illness. Finally, it is important to understand people's beliefs about the coronavirus at different times of the pandemic because it is a favorable period for the emergence and/or intensification of mental disorders.

Keywords: Beliefs, Covid-19, Evocation, Anxiety, Mental Health

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Resumen

Esta investigación comparó evocaciones sobre el término "coronavirus" en dos períodos diferentes durante la pandemia de COVID-19 en Brasil – en marzo (inicio de la pandemia en el país) y en junio (Brasil como epicentro de la pandemia) de 2020. Se consideró la presencia o la ausencia de síntomas de ansiedad en los participantes. En los métodos, se utilizó la técnica de evocación libre y la escala de síntomas de Trastorno de Ansiedad Generalizada (GAD-2). En total, 5961 mujeres y 1153 hombres participaron en el estudio. La selección de los participantes se realizó mediante una muestra de conveniência com un cuestionario online. Los resultados mostraron que el coronavirus se sintió de manera diferente entre los grupos que fueron evaluados y según el momento de la recolección de los datos. En general, en marzo, las personas con síntomas de ansiedad tenían una visión más catastrófica del futuro, mientras que las personas sin esos síntomas evidenciaban un repertorio menos desfavorable para ajustarse a la situación. En junio, ambos grupos reportaron una visión negativa del escenario, lo que indica una disminución o agotamiento en la capacidad de ajuste psicológico. Esto sugiere la posibilidad de un aumento de algunas condiciones que resultan en deterioro adaptativo, agotamiento y enfermedad mental. Finalmente, es importante comprender las creencias sobre el coronavirus en diferentes momentos de la pandemia, porque es un período favorable para la aparición y/o intensificación de los trastornos mentales.

Palabras clave: creencias, COVID-19, evocación, ansiedad, salud mental

Individuals' beliefs regarding a phenomenon influence how they behave and feel about it. Thus, interpretation of events is a crucial element for understanding what motivates people's attitudes and behaviors (Torres et al., 2015). When dysfunctional, beliefs may interfere with the quality of life, favoring the occurrence of maladjusted behaviors (Earnshaw et al., 2020), and the appearance of depressive and anxious feelings, for example (Barbosa et al., 2018). This is one of the reasons why Psychology helps explain how psychological and social factors determine health behaviors (Straub, 2014).

Health behaviors, which are defined as any behavior performed in order to maintain, improve or protect your health, are influenced by perceptions (and consequent interpretations) individuals have regarding the phenomena (Conner & Norman, 2017). We can say that understanding what people think about social events or phenomena that affect them and others helps to clarify how thoughts (and their associated emotions) influence actions aimed at health prevention and maintenance or risk exposure (McArthur et al., 2018). Thus, analyzing evocations produced by people in reference to an object or phenomenon may help clarify what people think and why they behave in certain ways (Brito & Camargo, 2011).

Since 2020, the Covid-19 pandemic, which affects almost the entire planet in the most diverse populations and life contexts, tends to be a central element in our thoughts. In February 2021, the world had already registered more than 113 million cases and 2.5 million deaths. In Brazil, which was still at high plateau in the number of daily losses, more than 10 million cases and 252,000 deaths had been detected, characterizing the worst disaster in terms of lives lost for a specific reason in the country's public health history (World Health Organization [WHO], 2021).

In the literature we find moderate to severe psychological impacts during the Covid-19 outbreak, with a significant increase in the rates of anxiety, depression, and stress (Maia & Dias, 2020; Wang et al., 2020). Anxiety is an emotional state that has physiological and psychological components, and is

characterized by subjective feelings of tension that can vary in intensity. It becomes pathological when it becomes disproportional to the stimulus to which it refers (Lee et al., 2020). In periods of high stress such as the pandemic, it is important to understand how people think, as thoughts can lead to anxious states, which, in turn, change behaviors towards the object. Anxious behavior is a factor that influences how people behave depending on how much they are exposed to risks (Otto & Smiths, 2018).

Not all people are able to functionally deal with the necessary preventive measures to face Covid-19, as isolation and social distancing cause different levels of anxiety (Rolim et al., 2020). Another interesting aspect is the consideration that the pandemic is not a static event. It can be understood in phases, such as pre-crisis, intra-crisis, and post-crisis (Faro et al., 2020). The pre-crisis is the moment for the first investigation of an existing health problem, when the first news and forms of care are disseminated. The intra-crisis phase is the moment when the disease is already installed, when the projection of cases increases and the severity of the disease is certified. Finally, the post-crisis phase is the moment of resumption of "normal" behavior, when facilities reopen, even if there are still new cases of contagion (Faro et al., 2020). Therefore, it is important to identify how people understood the beginning of the pandemic and its transition periods, aiming at recognizing how (and how much) this perception relates to people's anxieties. By identifying these beliefs, we consider it is possible to intervene or even predict their short and long-term repercussions, seeking to control the impact of the anxious state on psychological adjustment. Especially in the current scenario, understanding why people exhibit certain health behaviors helps to analyze how specific care in the face of the pandemic (e.g., use of masks, social distancing, and hygiene) are more or less attractive to the population (Al-Hasan et al., 2020). These care behaviors are then set as a goal for public health actions in the pandemic and indirectly bring to the agenda the need to understand why people adhere or not to what is recommended for risk prevention and minimization (Weiss & Paasche-Orlow, 2020).

The first phase of this investigation was carried out in pre-crisis Brazil, when social distancing and lockdown had been disclosed as control measures. The second phase occurred during the intra-crisis period, when the number of hospitalizations and deaths were increasing exponentially. In both phases, we wanted to understand the factors that might help explain Brazilians' behavior in the Covid-19 pandemic. The technique of evocation or free association of words helped in the search for the main words associated with coronavirus in Brazil. This is a technique that consists of asking participants to report what comes to mind when they hear an inductive term that is related to the social representation, object of the study (Wolter & Wachelke, 2013). Therefore, knowing the evocations associated with a specific term helps us to understand some important aspects of health behaviors in the Brazilian population, especially in the context of the Covid-19 pandemic.

The principal objective of this research was to identify evocations regarding the term "coronavirus" in two different periods in the Covid-19 pandemic — March (beginning of the pandemic in the country, pre-crisis phase) 2020 and June (Brazil as the epicenter of the pandemic, intra-crisis phase) 2020 –, considering the presence or absence of anxiety symptoms in participants. Moreover, we aimed to analyze the beliefs inferred from these evocations in terms of changes in the perception of coronavirus between the two periods in the pandemic.

Method

Study design

A quantitative cross-sectional survey was performed with a convenience sample from the general Brazilian population.

Participants

The research was carried out in two phases, for a total sample of 7,114 respondents.

The first phase had 2,144 participants from 22 states and the Federal District, namely: Northeast, 80.1% ($n = 1,717$); Southeast, 14.1% ($n = 303$); South, 2.9% ($n = 63$); Midwest, 2.4% ($n = 51$); and North, 0.5% ($n = 10$), reaching 238 cities or municipalities. Females were 76.1% ($n = 1,632$), with respondents aged from 18 to 78 ($M = 33$; $SD = 11.73$), 82.1% were graduated ($n = 1,760$), 17.2% had completed high school ($n = 368$) and 0.2% had completed elementary school ($n = 16$). When asked about health, 81.6% ($n = 1,750$) responded that they had no chronic disease diagnosed. The second phase had 4,970 respondents from all Brazilian states and the Federal District, with the following distribution: Northeast, 51.9% ($n = 2,580$); Southeast, 30.2% ($n = 1,502$); South, 8.1% ($n = 405$); Midwest, 5.8% ($n = 287$); North, 3.9% ($n = 196$), reaching 886 cities or municipalities. Most were also female (87.1%; $n = 4,329$). This phase had participants aged from 18 to 84 ($M = 31.3$ and $SD = 11.9$), of which 76.1% ($n = 3,783$) had university education, 23.3% ($n = 1,160$) attended secondary education, and 0.5% ($n = 27$) studied elementary school. Regarding the state of health, 77.1% ($n = 3,834$) did not have any chronic disease. It is important to note that a current or prior Covid-19 diagnosis, even a suspected long Covid syndrome, were not included in the question on chronic diseases.

The inclusion criterion of this study, in both phases, was to be over 18 years of age. As an exclusion criterion, people living outside Brazil were removed from the sample. Participant selection took place through a convenience sample, through the application of an online questionnaire. For the first phase, data collection began in the second half of March 2020 and lasted 5 days. For the second phase, data were collected in the first half of June 2020, for 10 days.

Instruments

Sociodemographic profile. It contained information on gender (male or female), age (in years), education (primary, secondary or university education), and place of residence. There was also a question on the presence of chronic diseases diagnosed (yes or no).

Free evocation. The free word evocation technique aims to investigate what the research subjects think about a particular object of study. The identification of these evocations generates a theoretical foundation based on the daily thoughts and practices of different individuals. Five evocations were recorded using the free association technique with words based on the stimulus: "What are the five things (for example, any words, images, emotions, feelings, etc.) that come to your mind when you hear or read the word CORONAVIRUS?".

Generalized Anxiety Disorder 2-item (GAD-2; Kroenke et al., 2007). Anxious symptoms were assessed using the GAD-2 and their scores composed spreadsheets that were used to divide the compared

groups (with and without anxiety; first and second phase of data collection). GAD-2 is a reduced measure of GAD-7, which is a screening measure for symptoms of generalized anxiety. GAD-2 has two questions about the previous two weeks ("feeling nervous, anxious or very tense" and "not being able to prevent or control concerns"), with four-point Likert-scale responses ("Not at all", "Several days", "More than half the days" and "Nearly every day"). The total score was calculated by adding the responses of the two items, in which the score equal to or greater than 3 indicates the presence of significant anxious symptoms. The performance of the GAD-2 as a screening tool for anxiety disorders had a cutoff value of ≥ 3 (see https://www.hiv.uw.edu/page/mental-health-screening/gad-2). Validation in Brazil was carried out by Bolsoni, Moscovici, Marques and Zuardi (2018). They found that the sensitivity was 81%, the specificity was 67% and the Area Under the Curve (AUC) was 79% (0.72-0.86), which means that the GAD-2 showed satisfactory psychometric indexes in the Brazilian people.

Procedures and Ethical Aspects

The research was approved by the National Research Council (CONEP, record n. information omitted for assessment). Data for both phases were collected by publishing the questionnaire link on social networks, such as Facebook, Instagram, and WhatsApp for the general population. Participants' consent was obtained by the acceptance of the terms set out on the first screen of the electronic address for data collection, in which the Terms of Consent were included. The average response time was 5 minutes in the first phase and 10 minutes in the second phase, according to the automatic recording of the platform used for collection.

Initially, the classification was made into four blocks: (a) people with anxious symptoms who participated in Phase 1 of data collection; (b) people without anxious symptoms who participated in Phase 1 of data collection; (c) people with anxious symptoms who participated in Phase 2 of data collection and (b) people without anxious symptoms who participated in Phase 2 of data collection. Then, four spreadsheets were generated according to the classification above. It is noteworthy to highlight that grouping participants was done to verify whether the perception of people who had a positive screening diagnosis had peculiar characteristics compared to those who did not. The theoretical framework of the analysis of free evocations was used to try to infer how the perception of the "pandemic" could be affecting their thoughts and behaviors in health.

Data Analysis

Descriptive analysis of data obtained from the sociodemographic questionnaire, the question about the presence of chronic diseases and the GAD-2 was performed using the JASP software. After this step, the GAD-2 score was calculated, and to be included in the group with symptoms in both phases the score had to be ≥ 3 (Kroenke et al., 2007). Evocations from both phases were grouped in four groups, namely: people with and without anxiety symptoms in the first phase and people with and without anxiety symptoms in the second phase.

Evocation analysis, after separating the diagnostic groups by data collection phases, was performed using OpenEvoc .88 software (www.hugocristo.com.br/projetos/openevoc). OpenEvoc allows performing simple statistical analysis of the evocations reported by participants, considering the order of the responses they provide, as well as the frequency of the evoked terms. From the interaction between

frequency (number of times the word was remembered) and evocation order (primacy in which it was spoken), the degree of importance of the responses provided and their type of relationship with the inducing terms is defined (Sant' Anna, 2012). The lower the evocation order, the greater the primacy of the word.

Through OpenEvoc it is possible to build matrices of co-occurrences and its analysis allows the construction of a table with four quadrants which shows the number of times and importance of each evocation. The first quadrant (upper left) shows the most frequent terms, but the recall order is lower than the general average, that is, in the first quadrant are the terms most evoked (higher frequency) and most quickly remembered (lowest order, that is, lowest position). It is equivalent to the central core. The central core consists of stable and more permanent elements of a social representation; furthermore, it is also related to the collective memory that gives meaning, permanence, and consistency to the social representation of a given object of study (Abric 1994; Sá, 1996). The second quadrant (upper right) has the terms with the highest frequency and recall order. The second quadrant complements the understanding of the elements of the first quadrant. The third quadrant (bottom left) has terms with the lowest frequency and recall order, but that are important for a group of individuals. Thus, if the contents present in the third quadrant are reinforced over time, they can constitute elements of the central core (first quadrant). Finally, the fourth quadrant (bottom right) has the least frequent terms and a higher recall order (Sant'Anna, 2012).

The study of these four quadrants is important to understand the object of this study, since by identifying the main evocations associated with the inductive term it is possible to know which factors influence the behavior of individuals in the context studied here. Furthermore, the literature indicates that OpenEvoc is useful in research that seeks to understand human beliefs, social representations, and behaviors (Barreto et al., 2021; Chaves et al., 2020; Turri & Faro, 2018).

Results

In total, we analyzed 10,327 evocations collected in Phase 1 and 24,850 evocations collected in Phase 2, with a total of 35.177 evocations related to the inducing term "coronavirus". As for the presence of anxiety symptoms in GAD-2, 36.3% (n = 778) participants in Phase 1 were diagnosed with significant anxiety symptoms, 3.796 words were evoked in the group. Participants without anxiety symptoms in Phase 1 were 63.7% (n = 1,366) and 6.531 words were evoked. In Phase 2, 60.2% of the sample (n = 2,995) had anxiety symptoms and introduced 14,070 evocations, while 39.8% (n = 1,977) did not have those symptoms and generated 9,880 evocations. Table 1 shows the four quadrants divided by phase and by symptomatology. It is noteworthy that the table shows only the first five evocations by order of primacy, as they gathered the necessary information to understand and differentiate the contents inside each quadrant.

Table 1

General Chart of Evocations on Coronavirus (Brazil, March and June 2020, n = 7,116)

Phase 1						Phase 2					
1st Quadrant											
Frequency (%) ≥ 2.0 and Average Rating < 3.0						Frequency (%) ≥ 1.5 and Average Rating < 3.0					
With symptoms			Without symptoms			With symptoms			Without symptoms		
Words	f^1	AR^2	Words	f	AR	Words	f	AR	Words	f	AR
Fear	13.1	1.8	Fear	9.8	2.1	Fear	12.2	1.9	Fear	9.6	1.9
Death	6.2	2.8	Death	4.7	2.9	Death	9.0	2.5	Death	7.2	2.7
Concern	3.4	2.7	Concern	3.1	2.2	Sadness	5.4	2.8	Sadness	4.1	2.8
Anxiety	3.4	2.9	Disease	2.7	1.9	Isolation	3.0	2.8	Isolation	3.9	2.8
Panic	2.4	2.7	Pandemic	2.4	2.0	Distress	2.8	2.9	Disease	2.5	2.1
2nd Quadrant											
Frequency (%) ≥ 2.0 and Average Rating ≥ 3.0						Frequency (%) ≥ 1.5 and Average Rating ≥ 3.0					
With symptoms			Without symptoms			With symptoms			Without symptoms		
Words	f	AR	Words	f	AR	Words	f	AR	Words	f	AR
Sadness	3.6	3.1	Care	3.6	3.1	Anxiety	4.3	3.0	Anxiety	2.5	3.0
Isolation	2.8	3.3	Isolation	3.1	3.1	Family	1.6	3.4	Care	2.3	3.1
-	-	-	-	-	-	Longing	1.6	3.7	Family	1.8	3.3
-	-	-	-	-	-	-	-	-	Distress	1.6	3.0
-	-	-	-	-	-	-	-	-	Mask	1.6	3.0
3rd Quadrant											
Frequency (%) < 2.0 and Average Rating < 3.0						Frequency (%) < 1.5 and Average Rating < 3.0					
With symptoms			Without symptoms			With symptoms			Without symptoms		
Words	f	AR	Words	f	AR	Words	f	AR	Words	f	AR
Pandemic	1.9	2.2	Prevention	1.8	2.8	Lockdown	1.4	2.8	Lockdown	1.4	2.9
Disease	1.7	2.3	Panic	1.4	2.6	Anger	1.3	2.9	Virus	1.0	2.4
Insecurity	1.4	2.8	Insecurity	1.3	2.8	Loneliness	1.2	2.9	Anger	0.9	2.8
Lockdown	1.2	2.8	Anxiety	1.2	2.9	Pandemic	1.1	2.3	Tiredness	0.7	2.7
Chaos	1.2	2.9	Uncertainty	1.2	2.8	-	-	-	Distancing	0.7	2.9
4th Quadrant											
Frequency (%) < 2.0 and Average Rating ≥ 3.0						Frequency (%) < 1.5 and Average Rating ≥ 3.0					
With symptoms			Without symptoms			With symptoms			Without symptoms		
Words	f	AR	Words	f	AR	Words	f	AR	Words	f	AR
Family	1.7	3.3	Family	1.9	3.2	Pain	1.3	3.2	Longing	1.4	3.4

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4th Quadrant											
Frequency (%) < 2.0 and Average Rating ≥ 3.0						Frequency (%) < 1.5 and Average Rating ≥ 3.0					
With symptoms			Without symptoms			With symptoms			Without symptoms		
Words	*f*	AR	Words	*f*	AR	Words	*f*	AR	Words	*f*	AR
Care	1.7	3.4	Lockdown	1.9	3.2	Mask	1.2	3.1	Hope	1.3	3.8
Uncertainty	1.3	3.2	Elderly	1.4	3.2	Care	1.1	3.3	Hospital	1.0	3.2
Faith	1.0	3.9	Chaos	1.2	3.0	Hospital	1.0	3.1	Change	0.9	3.2
Hygiene	1.0	3.9	Hygiene	1.1	3.2	-	-	-	Health	0.8	3.5

Notes. Evocations in phase 1 = 3.796 evocations of people with symptoms and 6.531 evocations of people without symptoms. Evocations in phase 2 = 14.070 evocations of people with symptoms and 9.880 evocations of people without symptoms.

[1] Frequency-Percentage. [2] Average Rating

First quadrant

Based on an analysis of Table 1 in the first quadrant of Phases 1 and 2, we can see that "fear" and "death" were highlighted in both phases, both by people with and without anxiety symptoms. Another important aspect is that both groups of anxiety symptoms in Phase 1 brought "concern" as a term that related to that moment of the pandemic. In Phase 2, the third most common evocation was "sadness". The fourth and fifth terms in the first quadrant had the most different positions among the groups and phases. Moreover, since they are in the same quadrant, an association between the terms that make up each quadrant is assumed. In both phases, the evocations of those participants with significant anxiety symptoms had affective elements of a negative character ("anxiety" and "panic", in Phase 1; "distress", in Phase 2), even though the term "isolation" was repeated among the anxiety diagnoses in Phase 2. On the other hand, individuals who did not show significant anxiety symptoms generated the evocations "disease" and "pandemic" in Phase 1, and "isolation" and "disease" in Phase 2. Finally, it is worth mentioning that the first quadrant refers to the most common idea or notion among participants about the new coronavirus, which suggests that there are both common elements (especially the negative affective tone) and specificities regarding the phase (moment of the pandemic) and the presence or absence of significant anxiety.

Second quadrant

The second quadrant shows the evocations that help to understand the first quadrant and the beliefs that are potentially contained in them. In Phase 1, people with anxiety symptoms associated "sadness" and "isolation"; in Phase 2, those with symptoms associated "anxiety" and "family" and "longing", probably indicating the effects of lockdown and social distancing, which promoted physical distancing among people. Those without anxiety symptoms, however, saw in isolation something positive in Phase 1: a protective measure, as they evoked the terms "care" and "isolation". Thus, in Phase 1, isolation had different perspectives for each group. For one group, it suggested difficult adaptation (with anxiety symptoms); for the other, preservation (without anxiety symptoms). Furthermore, in Phase 2, people without anxiety symptoms introduced the terms "anxiety", "care" and "family", which may explain the feeling of "distress" when the group faced a scenario of uncertainty.

Third quadrant

The third quadrant shows that the group of people with anxiety symptoms reported, in both phases, words with negative content, such as "disease," "insecurity" and "chaos" (Phase 1) and "anger," "loneliness" and "pandemic" (Phase 2). This may indicate a considerable increase in anxiety over the course of the pandemic. Furthermore, the group without anxiety symptoms also highlighted more negative words, such as "panic," "uncertainty", "insecurity," (Phase 1), "anger" and "tiredness" (Phase 2). It is important to highlight that the third quadrant shows the beliefs that people most readily remembered, but they represent a smaller group. Hence, the third quadrant showed relevant terms that characterized the pandemic as a more acute scenario of insecurity and negative emotions in both phases of data collection.

Fourth Quadrant

Finally, the fourth quadrant, where the most general evocations that help interpret the previous quadrants are found, shows in Phase 1 some evocations with a more positive aspect ("hope", "faith" and "hygiene", for example), which were remembered by both groups. Also in Phase 1, the group without symptoms brought evocations that suggest concern in relation to close people (such as "family" and "elderly"), with an apparent association with elements such as "health" and "solidarity". In Phase 2, the group without anxiety symptoms mentioned similar words to Phase 1, but included new terms that may indicate possible poorly adaptive forms of coping with the Covid-19 pandemic, such as "hospital" and "longing." People with anxiety symptoms also mentioned in Phase 1 "family" and the "care" necessary to maintain good health, such as paying attention to "hygiene". In Phase 1, people with anxiety symptoms also recalled "faith" and "uncertainties," mentioned with regard to the Covid-19 pandemic. In Phase 2, the group with symptoms showed evocations that refer to a more negative emotional symptom ("pain" and "hospital"); however, the same group also generated the "mask" evocation, which alludes to one of the main mechanisms adopted to effect basic care behaviors.

Discussion

The main objective of the present study was to identify evocations about the coronavirus and analyze the beliefs inferred from these evocations in two distinct periods of the Covid-19 pandemic – pre-crisis (March 2020) and intra-crisis (June 2020) phases in Brazil – considering the presence or absence of significant anxiety symptoms. In the first quadrant, we notice that "fear" and "death" were reported in different contexts, both by people with and without anxiety symptoms in both phases. This allows us to advance the idea that the pandemic is basically seen as something essentially negative and powerful, as an example of a disaster or a catastrophic event. As another study also carried out in Brazil during the Covid-19 pandemic showed, fear was the most basic emotion triggered by such an event and death was the potential outcome or constant risk (Ornell et al., 2020). This research indicated that "fear" and "death" were common to all groups, with differences only when less frequent terms related to coronavirus were considered, even though the essence of the contents was emotionally negative for both people with and without anxiety symptoms, in both phases. For example, among those with anxiety symptoms, Phase 1 had the terms "concern," "anxiety" and "panic", and Phase 2 had "sadness," "isolation" and "distress". This information matches the fact that in Phase 1, the pandemic was just beginning in Brazil, and expectation and uncertainty prevailed permeated with fear (Lima et al., 2020) as to what

the repercussion would be in the country; whereas in Phase 2, the reality was contagion, hospitalizations, and deaths country-wide (BBC News, 2020; Fundação Oswaldo Cruz, 2020).

Matching these findings, a study carried out in China observed feelings of terror during the pandemic (Zhang & Ma, 2020), and two other studies from China and Turkey showed high anxiety and depression (Cao et al., 2020; Özdin & Özdin, 2020). Thus, this negative notion during the pandemic helps us understand the extent of the repercussions on people's mental health, as it suggests that those more cognitively and emotionally weakened have faced (or are facing) the pandemic as a disaster. This situation brought waves of fear and high anxiety, which increased the possibility of significant disorders in many individuals' psychological well-being and behavior (Barros et al., 2020). This is even more harmful among those who already had some psychiatric disorder (Ornell et al., 2020).

By showing sensations of "sadness" and "isolation" in the face of the situation in Phase 1, the second quadrant reinforced the context of negative emotions reported by the group with anxiety symptoms shown in the first quadrant. In Phase 2, this may be because people have been under a lockdown and distancing policies for months. People in this group have reported evocations referring to the direct effects of these policies on the daily lives of the population, such as the persistent feeling of "anxiety" along with "longing" which we can relate to family and other close people. Therefore, evidence shows that lockdown and social distancing, especially when prolonged, tend to reinforce the perception of suffering and increase negative emotions (Ornell et al., 2020).

People who are isolated at home or hospitalized have managed little or no contact at all with their relatives during this period, often making it impossible to take leave before death among family members, which makes the mourning experience more difficult (Eisma et al., 2020). However, even in cases where there were no losses of a loved one, many individuals experienced an intense feeling of longing or suffering from the changes in the qualities of interpersonal interactions caused by the pandemic (Weir, 2020).

Another relevant aspect of the Covid-19 pandemic is the occurrence of deaths of several members of the same family (Bianco & Costa-Moura, 2020), which may relate to evocations referring to "family", "longing", and "distress", for example. Distancing, as well as deaths of family and friends, can bring additional stressors when coping with and adapting to losses (Wallace et al., 2020). In the pandemic, high mortality rates among elderly people have brought significant emotional pain to the population (Crepaldi et al., 2020), especially because of the numbers and temporal proximity among them, raising the spread of negative emotions during the period of isolation, such as sadness.

The complexity of the factors related to the Covid-19 pandemic can impact losses in many ways, making many people experience anticipated mourning and, depending on the place and conditions of the death, mourning may become a risk factor for the mental health of numerous people, causing anxiety and distress (Bajwah et al., 2020). Some other risk factors for mental health related to death are fragility of the socio-affective support network due to social distancing (Wallace et al., 2020); losing more than one loved person (Worden, 2018); the lack of a funeral ritual (Victor & Ahmed, 2019), and the feeling of guilt that some people may experience by believing they are responsible for the death of a loved person (Taylor, 2019). Under these circumstances, the Covid-19 pandemic can

affect the mental health of the population in a broad way, both by increasing the symptoms of mental disorders and through the experiences of contagion, disease, death, or mourning resulting from the new coronavirus.

In the third quadrant, those who were anxious and those who were not anxious reported, in both phases, evocations with negative content, with symptoms of "insecurity" and "chaos" in Phase 1, "anger" and "loneliness" in Phase 2. However, without symptoms of: "panic" and "uncertainty" in Phase 1, "anger" and "tiredness" in Phase 2, which characterized the pandemic as a scenario of uncertainty and negative emotions. In this quadrant, a subgroup stands out for having a closer perception of the context lived in the pandemic. This perception was characterized as more catastrophic and signaled greater psychological suffering. The evocations referred to contents of greater aggravation for mental health symptoms (especially "anxiety") and to the harmful character of the reality experienced. Accordingly, studies show that the spread of the coronavirus is associated with generalized anxiety in several countries (Twenge & Joiner, 2020; Wang et al., 2020; Wheaton et al., 2021).

Anxiety is a multifaceted phenomenon that triggers distressing emotions, bodily sensations, physiological excitation, thoughts and images of danger and escape, among other defensive behaviors (Özdin & Özdin, 2020). Individuals with high anxiety during the pandemic may cause a health system overflow or even be reluctant to comply with warnings regarding pandemic controls (Özdin & Özdin, 2020). A study of about 1,200 people reported that more than half the individuals with moderate to severe anxiety levels were afraid of their family members contracting the coronavirus and that this is a thought that negatively affects mental health, as it increases uncertainty and insecurity (Wang et al., 2020). This helps to understand the presence of relevant terms in the third quadrant, which characterized the pandemic as a scenario of insecurity and negative feelings in both phases of data collection. In other words, the insecurity from the beginning of the pandemic (Phase 1) still guides the behaviors of part of the population (Phase 2), requiring greater attention for later moments (Rolim et al., 2020).

Finally, the fourth quadrant shows more positive evocations that were mentioned by both groups. In Phase 1, both groups recalled some more positive words, such as "hope" and "faith". People with anxiety symptoms reported more positive terms in the pre-crisis period of the pandemic (such as "care" and "faith") than in the intra-crisis period. In Phase 2, the group with symptoms brought evocations with more negative content (such as "hospital" and "pain"); however, it also mentioned words that refer to a more positive emotional symptom (such as "mask" and "care"). Also in this quadrant, participants started to introduce content indicating that we can overcome the situation (such as "hope" and "change"). This shows that although people are still really afraid and worried about the world health situation; participants think that the situation can improve, which may possibly occur with the stabilization or reduction of the high rates of contagion and deaths due to Covid-19. This more positive perception can act as a protective factor for health in crisis situations (Peteet, 2020) and is expected to occur from mass vaccination (Ministério da Saúde do Brasil, 2020).

In general, considering the four quadrants, people with anxiety symptoms in Phase 1 had a more catastrophic view of the future, while people without those symptoms had a less unfavorable repertoire to adapt to the situation. In Phase 2, both groups reported a negative view of the scenario, indicating a

decrease or exhaustion of their capacity for psychological adjustment during the Covid-19 pandemic. This suggests that some conditions that cause impairment, exhaustion and mental illness may increase, such as anxiety, depressive disorders, and suicidal behaviors (Özdin & Özdin, 2020; Wang et al., 2020). Thus, people with anxiety symptoms seem to show more vulnerability in this study, as fear may filter the reality that they see through a negative and potentially catastrophic bias. On the other hand, even though they went through a stressful event, people without anxiety symptoms demonstrated seeing a context based on notions that are closer to observed reality, to the problems linked to Covid-19 in terms of protection and risk, and not only to the negative emotional response triggered by the months exposed to the pandemic.

This study has theoretical and practical implications. It was seen that people who presented greater anxiety symptoms saw the pandemic as a context of greater risk and greater harm to their routine and their lives. Insofar as it is possible to understand how people evaluate the object as well, we expect that it will be possible to think about how they behave in relation to that object. Another contribution is that upon realizing that people are evoking contents more linked to a perception of high risk and damage from the pandemic, it seems feasible to say that these people are more susceptible to show adaptive damage. This would be a way to understand their health behavior. For example, more anxious people can show more protective behavior and protect themselves against the virus, with the use of masks and alcohol, but they also have greater psychological distress and suffering throughout the pandemic due to its severity and long exposure time.

We should point out that this research has some limitations. The first one is that the results cannot be considered to point to probabilistic inferences about the overall population, because, although large, the sample is not representative of the Brazilian population. Moreover, the diagnosis of anxiety screening used in the research was performed using an ultra-brief scale (GAD-2), which only indicates anxiety symptoms that are higher than usual, and it is not a clinical diagnosis.

Notwithstanding, some virtues of this study must also be highlighted. They are, for example, that this research was carried out at two moments of the pandemic in Brazil and has a large sample in both moments, an innovative facet of this investigation.

It should be noted that no other study with the same objective as this one was found, making any comparisons with previous studies on the same topic impossible. We suggest that future studies continue to investigate how the Brazilian population is coping with the Covid-19 pandemic, in order to assess changes in perception of the coronavirus and its repercussions on mental health. It is also important to consider that in many countries a transition to "normality" began in mid-2021. Therefore, we also recommend that future studies assess the relationship between the return to "normality" and psychological adjustment in the "post-pandemic".

Finally, we believe that the analysis of health beliefs serves as a guiding element for understanding the psychological aspects involved in the Covid-19 pandemic, as it helps to explain how the event affects the interpretation of the experienced context is perceived and, in the end, how it influences the confrontation of this reality. This dynamic, in turn, impacts the chance of presenting symptoms of anxiety, depression or even other common mental disorders. Therefore, we support that mental health should be considered

a central aspect of care during and after the pandemic, especially given the physical and psychological sequelae that are likely (and will likely be) associated with this unprecedented global public health crisis.

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