

Mental Health After Experiencing an Extratropical Cyclone: Descriptive Study in the Municipality Of Caraá - RS

Saúde Mental Após a Vivência de um Ciclone Extratropical: Estudo Descritivo no Município de Caraá - RS

Salud Mental Después de Sufrir un Ciclón Extratropical: Estudio Descriptivo en el Municipio de Caraá - RS

RESUMO

Desastres ambientais vem acontecendo com maior frequência nos últimos anos e esses eventos possuem o potencial de provocar grandes impactos sejam eles materiais ou emocionais, tanto na cidade atingida quanto nos indivíduos que nela residem. Com isso, o objetivo deste trabalho é compreender os possíveis impactos emocionais em pessoas atingidas pelo ciclone extratropical no município de Caraá, Rio Grande do Sul, da mesma forma, entender os sentimentos e emoções de pessoas afetadas e analisar a importância do apoio comunitário na reconstrução pós-desastre. Para isso, utilizou-se de um desenho qualitativo, descritivo. Os instrumentos utilizados para a coleta de dados foram de Grupo de comunicação virtual; Grupo focal; Entrevistas não estruturadas, Observação naturalística e registros fotográficos do ambiente. A pesquisa contou com o total de 10 participantes residentes do município de estudo, que tiveram suas casas e/ou comércios atingidos pelo ciclone em junho de 2023, sendo 6 mulheres e 4 homens, entre 18 a 70 anos, dentre os 10 participantes, 5 dessas pessoas referem-se às entrevistas individuais não estruturadas e 5 destes ao Grupo focal. A análise foi realizada utilizando análise de conteúdo de Bardin. Os resultados demonstram que os impactos emocionais despotencializadores foram mais expressivos nos participantes, demonstrando a vulnerabilidade dos mesmos mesmo um ano e meio após o desastre. Por outra parte, verificou-se a resiliência comunitária e apoio mútuo como sendo um fator importante para a reconstrução da vida desses após o desastre.

PALAVRAS-CHAVE: Desastre ambiental; Ansiedade climática; Resiliência; Psicologia dos desastres e emergências.

ABSTRACT

Environmental disasters have been occurring more frequently in recent years and these events have the potential to cause major impacts, whether material or emotional, both on the affected city and on the individuals who live there. Therefore, the objective of this work is to understand the possible emotional impacts on people affected by the extratropical cyclone in the municipality of Caraá, Rio Grande do Sul, in the same way, to understand the feelings and emotions of affected people and to analyze the importance of community support in reconstruction post-disaster. For this, a qualitative, descriptive design was used. The instruments used for data collection were virtual communication group; Focus group; Unstructured interviews, naturalistic observation and photographic records of the environment. The research included a total of 10 participants living in the study municipality, who had their homes and/or businesses hit by the cyclone in June 2023, 6 women and 4 men, between 18 and 70 years old, among the 10 participants, 5 of these people refer to individual unstructured interviews and 5 of these to the focus group. The analysis was carried out using Bardin's content analysis. The results demonstrate that the disempowering emotional impacts were more significant in the participants, demonstrating their vulnerability even a year and a half after the disaster. On the other hand, community resilience and mutual support were found to be an important factor in rebuilding their lives after the disaster.

KEYWORDS: Environmental disaster; Climate anxiety; Resilience; Psychology of disasters and emergencies.

RESUMEN

Los desastres ambientales han estado ocurriendo con mayor frecuencia en los últimos años y estos eventos tienen el potencial de causar importantes impactos, ya sean materiales o emocionales, tanto en la ciudad afectada como en las personas que viven allí. Por lo tanto, el objetivo de este trabajo es comprender los posibles impactos emocionales en las personas afectadas por el ciclón extratropical en el municipio de Caraá, Rio Grande do Sul, de la misma manera, comprender los sentimientos y emociones de las personas afectadas y analizar la importancia del apoyo comunitario en la reconstrucción post-desastre. Para ello se utilizó un diseño descriptivo cualitativo. Los

no estruturadas, observação naturalista y registros fotográficos del entorno. La investigación contó con un total de 10 participantes residentes en el municipio de estudio, quienes vieron sus viviendas y/o negocios afectados por el ciclón en junio de 2023, 6 mujeres y 4 hombres, entre 18 y 70 años, entre los 10 participantes, 5 de estas personas refieren a entrevistas individuales no estructuradas y 5 de ellas al grupo focal. El análisis se realizó mediante el análisis de contenido de Bardin. Los resultados demuestran que los impactos emocionales desempoderantes fueron más significativos en los participantes, demostrando su vulnerabilidad incluso un año y medio después del desastre. Por otro lado, se descubrió que la resiliencia comunitaria y el apoyo mutuo eran un factor importante para reconstruir sus vidas después del desastre.

PALABRAS CLAVE: Desastre ambiental; Ansiedad climática; Resiliencia; Psicología de los desastres y emergencias.

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INTRODUCTION

The municipality of Caraá was part of the city of Santo Antônio, having been emancipated on December 28, 1995, through State Law No. 10,641. It has an area of 292.5 km² and is located in the North Coast Region of the State of Rio Grande do Sul, between the mountains, the metropolis and the sea; being between the municipalities of Maquiné, Santo Antônio da Patrulha, Osório and Ri-zinho. The municipality has a rugged terrain, has valleys and is bathed by the Rio dos Sinos and Rio Caraá. The entire area of the Municipality is included in the Jacuí River Basin, and the source of the Rio dos Sinos is located

in this territory⁽¹⁾.

Between June 15 and 16, 2023, according to the Civil Defense of Rio Grande do Sul⁽²⁾, 14 municipalities declared a state of emergency due to the extratropical cyclone and the large volume of rain that hit part of the State. Among these cities is Caraá, which according to the news website G1⁽³⁾, had 5 deaths, making it the municipality with the highest number of deaths recorded at that time. According to Decree No. 57,069, of June 21, 2023⁽⁴⁾, in accordance with Art. 1 of this decree, the emergency situation was approved in the municipality of Caraá in Rio Grande do Sul. Soon after, on July 11, 2023, Caraá reported to the Civil Defense⁽⁵⁾ a new occurrence of gales,

heavy rains, and other occurrences in the city.

The Ministry of National Integration, with Normative Instruction No. 2, of December 20, 2016, "Establishes procedures and criteria for declaring a state of emergency or public calamity...", divides situations into levels. Level I is of low intensity, where there are only surmountable human damages and the situation can be easily resolved. Level II is of medium intensity, resulting from situations that can be overcome with the support of State and Municipal resources. Level III is of high intensity, with the occurrence of deaths, isolation of communities, interruption of essential services, closure or destruction of housing units,

among other situations, and requires support from the three spheres of action of the National Civil Defense and Protection System⁽⁶⁾. In this study, the data reported refer to level III emergency situations in the city of Caraá.

Climate disasters impact the health of individuals at different levels of damage and severity. In technical terms, they are defined as avalanches, epidemics, floods, landslides and fires, whether or not caused by human action, and these have been occurring more frequently in recent times throughout the world, causing a major impact on the population, whether directly or indirectly affected⁽⁷⁾. The Civil Defense of Rio Grande do Sul reports that in recent years these events have intensified in the state, due to global warming. The effects of ENSO (El Niño and La Niña), which refer to the Sea Surface Temperature (SST), directly influence the state's climatic conditions.⁽⁸⁾

There are some characteristics that must be observed to understand the disaster. In this sense, it is necessary to observe the socio-political-cultural issues of vulnerability, personal and asset exposure, capacity for comprehensive risk management, risk perceptions and the environment. According to the Federal Council of Psychology, events like these can lead to various manifestations in the people involved, as they change the geography in which they are inserted, making everyday actions difficult and causing social disorganization. Likewise, various emotions and sensations will be involved at this moment, as stated by the CFP: "fear, horror, feeling of helplessness, confrontation with destruction, chaos, one's own death and/or that of others, as well as acute disturbance in beliefs, values and meanings".⁽⁹⁾

The emotional impact on people affected by the disaster can be immediate, chronic or lasting. These emotional responses can lead to psychopathologies such as acute stress

and post-traumatic stress, generating a situation of discomfort, arising from these stressful situations. In this sense, the importance of the work of psychology professionals in crisis interventions and/or psychological first aid is evident, which aim to minimize psychological suffering and promote emotional recovery⁽¹⁰⁾.

The risks of environmental disasters can increase through the negligence of these events, when due importance is not given to these occurrences. It is the role of Public and Private Policies to be involved in these scenarios, not only in the post-disaster period, but mainly in the prevention and planning of crisis situations, since it is possible to avoid greater material and immaterial damage, protecting people and cities and developing greater resilience⁽⁹⁾.

The objective of this study was to describe the possible emotional impacts of climate disasters on people affected by them. Likewise, we sought to understand the feelings and emotions of a group of people affected by the disaster and to analyze the importance of community support in post-disaster reconstruction.

Method

Outline

To investigate the emotional impacts on a community affected by a climate disaster, we chose to conduct a qualitative, exploratory study with a multi-method data collection approach and data triangulation. The multi-method strategy contributed analytically in this type of scenario because it offers several means of data collection and analysis that are integrated into a broad and comprehensive study design⁽¹¹⁾. In this sense, we chose to approach the phenomenon through several methods: virtual communication groups, naturalistic observation and photographic records of the environment, individual interviews and focus groups.

Through the virtual communication groups, we used the netnography approach, which consists of a qualitative research method that adapts ethnographic techniques to study interactions and behaviors in virtual environments. This method includes observation, content analysis and, in some cases, the interaction of the researcher with community members to understand their experiences and social dynamics. From the perspective of naturalistic observation and photographic records of the environment, an exploratory qualitative proposal was carried out.

Participants

Participants are described according to multi-method procedures. The participant selection process focused on residents of the municipality affected by the 2023 cyclone who expressed voluntary interest in participating in the research. Thus, the interactions of 10 people aged between 18 and 70 years old were analyzed, 6 women and 4 men. Of the 10 participants, 5 people participated in unstructured individual interviews and 5 participated in the focus group in which they accepted the invitation made through the WhatsApp Group managed by the City Hall. Participants were selected by convenience. It is understood that in this type of research, those who are interested and available participate, based on the invitation made by the researchers.

Instruments

Virtual communication group (WhatsApp social network):

With the aim of approaching and introducing the study to the community impacted by the cyclone, through the mediation of the City Hall, the members of the research team were included in a Whatsapp group that addressed the topic. This entry sought to transmit general and ethical guidelines, but also contributed to the formation of

bonds with those involved. It became possible to analyze data from social networks such as Whatsapp based on the social actors and their social relationships. Access to the group also responded to a demand for observation and recording of behavior patterns among participants and exchanges between them considering the topic of the impacts of the cyclone on the daily lives of these residents in this virtual space⁽¹²⁾.

Naturalistic observation with photographic records of the environment:

During the data collection process, photographic records were made of environments and spaces where it was possible to identify the impacts of the cyclone, which was transversal to the entire collection. These records, in turn, had connections and relationships with the understanding of the phenomenon. The proposal to observe and record the characteristics of the surroundings as well as the possible impacts of the cyclone on the territory is in line with the objectives of the study. Naturalistic observation techniques should be used in situ, especially when preliminary information about the real situation is required⁽¹¹⁾.

Unstructured interviews:

Based on the theoretical basis or prior knowledge of the situation, the research team directed questions and topics related to the objectives of their research, and could direct the interview to questions that were not planned according to the participant's reflections, but without straying from the proposed theme and structure⁽¹³⁾. In this type of interview, a list of topics to be investigated is made and the information to be coded in a system of categories is recorded⁽¹¹⁾.

In this stage of the research, topics related to perceptions and emotions relating to the past, present and future regarding the climate event were addressed, with the central question be-

ing "How are you after a year and a half after the cyclone?" directly in the territory. This type of interview, according to⁽¹¹⁾, covers the physical aspects, functioning and social attributes in which people work and live, which is in line with the research proposal⁽¹¹⁾.

The unstructured interview can be used as a single data collection technique or in conjunction with others. With it, it is possible to identify the subjectivity and behaviors of each interviewee, thus being able to reach thoughts, feelings and perceptions associated with the phenomenon. This should be composed of pre-determined questions and leave open questions that may arise during the dialogue between participant and researcher⁽¹⁴⁾.

Focus Group:

Focus groups have provided significant insights into the field of research and are based on generating and analyzing the interaction between participants rather than asking the same question to each member of the group individually. The objective of the focus group is for participants to interact with each other, with a common theme, so that discussion and collaboration can take place among the members, with the mediation of the researcher⁽¹⁵⁾. It is also important to avoid monopolizing the discussion by one of the members, inhibiting and influencing the others⁽¹¹⁾.

Based on the execution of the Focus Group, with participants previously selected with some characteristic in common for the research, an in-depth theoretical-critical analysis of the information collected is carried out. For this, the researcher must carefully observe the interactions and occurrences among the group members. The researcher will mediate and stimulate the group, but without proposing ideas or making significant interferences⁽¹⁶⁾.

Following the same line, in the focus group, themes were addressed relating

perceptions and emotions relating to the past, present and future regarding the climate event in a collective way, proposing the themes as the discussion took place.

Data collection procedures

Data collection took place in three stages. The first stage consisted of naturalistic observation and photographic recording of areas in the territory where it was possible to identify the impacts of the cyclone on the population. This stage occurred continuously, complementing the other stages.

The second and third stages of data collection took place in partnership with the Municipal Government of Caraá. The City Government provided a list of citizens affected by the climate event who were unable to return to their homes. In this sense, the research team was included in a WhatsApp group called "Reconstruction of Homes" managed by the City Government, configuring the first stage.

The group was joined on November 1, 2024, and from that point on, the netnography process began. The research objectives were presented to the group participants through a presentation video. In addition, members were invited to participate in the focus group on a voluntary basis, which would take place at a later date. The observation and recording of the interactions that occurred in this group were centered on the theme of the emotional impact of the cyclone on these participants.

The second stage, the focus group, took place on November 14, 2024, in the space provided by the city government, at the Marçal Ramos State High School. This lasted 2 hours and the topics covered focused on the discussion of the impact of the cyclone on citizens, considering the timeline of the disaster and future perspectives after the disaster.

The fourth stage, an unstructured

interview, was conducted directly on the territory, in commercial spaces located on the banks of the Sinos River, a region that was heavily impacted by the cyclone. The owners of the establishments and employees of the same spaces were contacted in person. During this contact, the research was presented and they were invited to participate in the interview, voluntarily. Also in this stage, when identifying points in the territory where the cyclone had impacted, the photographs were taken and validated with the participants to contrast their symbolic content, emphasizing the complementarity of the initial and final stages.

Data analysis procedures

After data collection, Content Analysis⁽¹⁷⁾ was performed. This analysis strategy was defined by Sampaio and Lycarião⁽¹⁸⁾ as a scientific research technique based on systematic, intersubjectively validated and public procedures to create valid inferences about certain verbal, visual or written content, seeking to describe, quantify or interpret a certain phenomenon in terms of its meanings, intentions, consequences or contexts. The raw data were analyzed and transformed into units of analysis that gathered meaning related to the research theme and grouped into a priori categories aligned with the literature. Finally, it was decided to enumerate the frequency of appearance of the a priori categories in the units of analysis.

Ethical procedures

The research was conducted taking into account the necessary ethical aspects, and the data collected were treated confidentially and anonymously. Thus, the research followed the precepts of Resolution 510/2016 of the National Health Council.

Participants were informed about the risks and benefits of the research, signing the Free and Informed Consent Form (FICF). The research was

submitted to and approved by the Research Ethics Committee at La Salle University (CEP) under protocol CAAE 83120724.9.0000.5307.

Results and Discussion

The results and discussion were presented considering the data collection strategies employed in the research. It is important to note that, although the data collection procedures of the study were subdivided into stages, it was understood that these occurred in a complementary and continuous manner, reflecting the complexity of the phenomenon from various sources at all times of the study.

Virtual communication group (WhatsApp social network)

It was observed that some of the participants were still sensitive and some of them were showing hostile expressions. This was demonstrated by the statement of one of the group participants: *“The name of this group is RECONSTRUCTION OF HOUSES and this topic is very important and we have been fighting this fight for over a year. Everyone must agree that having their homes is more important than a survey”* (participant 1).

Studies address the consequences on the mental health of individuals affected by climate disasters, in which various psychopathological manifestations can occur, including acute, sub-acute and long-term. For this reason, even long after the event, behavioral changes, increased substance use, depression, anxiety and aggressive behavior can be observed⁽¹⁹⁾.

In addition, it was possible to verify political conflicts involving the reconstruction of their homes, which led to an initial refusal to participate in the research by some members of this group. In both prevention, coping and post-disaster, it is noteworthy that, with regrettable frequency, the fact that disasters have been announced

has not been impactful enough to mobilize those who have the authority to decide what needs to be done, and this generates outrage among those affected⁽²⁰⁾.

Finally, it is worth noting that the observation carried out in this group provided an opportunity to verify how open and available some of these residents were to expose their vulnerabilities related to the disaster. In the statement of one of the participants, this openness to sharing emotions can be contrasted: *“I think the purpose of the research is clear and the impact it can have on other people’s lives from now on”*

Literature has demonstrated how important the opportunity to share with others who have had the same experience is for the recovery process after a disaster. Franco⁽²⁰⁾ draws attention to the need to relearn the world after a loss, based on the experience of having bonded. Bonding can be with a person, a place, a family, or an abstraction that builds our identity.

Focus Group and Unstructured Interviews

The results from the focus group and interviews were analyzed using Bardin's content analysis⁽¹⁷⁾, considering a priori categories that contained prevalent themes, including the units of analysis (sentence excerpts) in the categories based on inductive epistemology. After the detailed transcription of the participants' statements, these were examined, interpreted and allocated to one of four categories: “Climate Disaster”; “Resilience”; “Emotions” and “Climate Anxiety”. The distribution of the frequency of appearance of the categories of the units of analysis is described in Table 1.

Tabela 1 - Frequência de aparição das categorias nas unidades de análise

Unit of Analysis	Climate Disaster	Emotions	Resilience	Climate Anxiety
Focus Group	15	15	7	0
Interview	32	24	10	14
Total	47	39	17	14

The “*Climate Disaster*” category included content related to descriptions and narrations of the climate episode that occurred in the city of Caraá in June 2023 and its consequences, material and emotional losses. Disasters are events that have a major impact on people’s lives due to the high level of danger and risk to physical and emotional integrity. These disasters generate suffering, as their consequences can be diverse, whether material or emotional. With the increase in technology, these disasters have been reported more frequently in the media; however, the focus of the news is on the physical aspects of the disasters, such as geographic and climatic aspects, leaving aside the psychological aspects⁽²¹⁾.

The frequency of appearances regarding Climate Disaster focused on two topics: consequences of the event (n=39) and the way in which the event occurred, referred to as the description itself (n=8), about the event. As for the manifestations related to the Consequences, one can identify manifestations mainly about emotional or material losses, as can be illustrated by the following excerpts:

“The store here, yes, was hit hard, just like the market over there (...) Funny, we have insurance, and the insurance didn’t cover a single Real.”

Participant 2

According to Silva, Martins and Cardoso⁽²¹⁾, based on the analysis of the consequences, coping strategies can be created for each subject, since each one will face the consequen-

es in a unique way, and they can be diverse, such as psychological and physical suffering, illnesses contracted after the disaster, loss of emotional and material ties, among others. On the other hand, still on the topic of consequences, it is possible to identify the impact that memory has on the event in the statement of Participant 3:

“It’s been over a year, right, but it seems so recent because since the day it happened, we talk about it every day, you know? It really was something that left a mark on everyone, right?”

For the topic of description itself, considering the traumatic experience of being, at the same time, bereaved and survivor, as is the case of the study participants, for Franco⁽²⁰⁾, they lived a strong experience of psychosocial transition, from the breakdown of their presumed world and the forced need to respond to the demands of everyday life, they experienced symbolic losses. When citing the event, we can cite the statement of Participant 1:

“When I got here, water was already starting to come in here too. It happened very quickly. Then we managed to lift some things and... At ten thirty, a quarter to eleven we were in water here, up to our waists. It happened very quickly.”

The “*Emotions*” category gathered content linked to feelings, sensations and affects related to the climate

event, being Potentializers: positive, constructive affects (n=3) or De-potentiators: negative, destructive affects (n=36). In this category, the subdivision into two subcategories makes sense because polarity was identified between the emotions. The information analyzed is in line with what is defined in place esteem, treating emotions related to space as Potentializers and De-potentiators⁽²²⁾. Potentializing emotions related to the place include feelings such as: joy, belonging, satisfaction, pleasure, welcome, etc. Since these emotions are positive for the subject, they bring a feeling of well-being and happiness. On the other hand, de-potentiating emotions generate suffering in the subject, bringing feelings of sadness, fear, anger, insecurity, hopelessness, among others. In the group of study participants, it is possible to verify the prominence of de-potentiating emotions to the detriment of potentiating emotions, which reinforces the thesis that a climate disaster generates a series of emotional instabilities that in a certain way last and lead to the recovery process.

As an illustration of Potentializing Emotions, the contribution of Participant 3 shows the importance of community support for the physical and emotional reconstruction of municipalities and individuals:

“A lot of people, sometimes, who weren’t cleaning, would ask, ‘Oh, do you need anything? Do you need help cleaning?’ So, I think that, for sure, we felt supported.”

There is positive esteem, which places the subject in connection with the city, and brings feelings of well-being, love and admiration⁽²²⁾. What was possible to understand through Participant 4:

“I like this place because I feel peace here”

As for the de-potentiating emotions, it was possible to verify negative emotions of fear, sadness, insecurity and hopelessness, as Participant 5 states:

“But I feel very sad, like, seeing that we are nobodies, you know?”

The “Resilience” category considered manifestations of both Individual (n=7) and Community (n=9) resilience in relation to the climate phenomenon. In situations of high stress, such as environmental disasters, resilience can be fundamental, as it allows individuals and communities, through social and psychological processes, to adapt and cope with events such as these in a healthy way, reducing the risk of major psychological impacts.⁽²³⁾

Regarding Individual Resilience, manifestations such as that of Participant 6 were found: “That we are capable of many things”. This resilience construct can be developed throughout an individual’s life as they go through challenges and difficulties, stimulating their coping skills. Thus, it is possible to find people with a higher level of resilience than others, and people who have more resilience in certain situations, that is, it is something situational and dynamic, and individual, interpersonal and external factors are important for reducing the consequences of adverse events⁽²⁴⁾.

In relation to Community Resilience, it is understood as an eco-systemic vision that sees the subject within a network between individual, family and environment, making these spheres contribute to the human community being able to adapt to adverse situations⁽²³⁾. It is possible to identify in the participants the role that community resilience played in mutual support for the reconstruction and continuity of the communi-

ty and subjects affected by situations of great impact according to the following manifestations:

“But we also had support from a lot of people who came to help us and I think that ended up giving us this support, this incentive for us not to give up.”

Participant 7

Resilience can be a form of Disaster Risk Reduction (DRR), but for this to happen, government management needs to follow some indicated strategies, such as: organization and coordination, budget allocation, risk analysis, development and improvement of infrastructure, safety of schools and health services, land use and occupation planning, education and training programs, protection of ecosystems and implementation of warning systems. By following these steps, management will be increasing resilience and reducing risks to its community⁽²⁵⁾.

The category “Climate Anxiety” (n=14) included contributions relating feelings and emotions characteristic of anxiety, but related to climate change. Climate Anxiety can cause negative emotional responses in the subject, and this involves bad feelings, physical sensations and concern about the future. It is linked to the perception of climate change, and can affect people who were directly impacted by the event, as well as people who were not directly affected, but who are exposed to media reports that bring up the impact of these events⁽²⁶⁾.

Contributions from participants can be identified referring to concerns about cyclones, such as rain or wind, and also negative feelings related to the media with the theme of environmental disasters and climate change. Below are some manifestations related to this category:

“Like the wind situation these days,

right? Oh, but it’s only going to be wind. But wind can be as devastating as flooding.”

Participant 3

Clayton and Karazsia⁽²⁶⁾ show that there is a difference between being worried and being very worried about climate change, with a low level of concern regarding the world’s climate changes being real, however, when this concern becomes excessive, it can be harmful to the individual’s life.

“I have a lot of trauma, I’m very afraid of rain, very afraid of wind. I used to love the sound of rain, but now I can’t stand the sound of rain. (...) I’ve loaded the car twice. I was scared, and then they started saying, there’s going to be a flood, there’s going to be a flood. I packed a backpack, I’ve done it twice. A backpack with food, a backpack with clothes, documents, I put them in the car.”

Participant 8

Furthermore, the impact can be identified in Participant 8’s report. As the mother of a 4-year-old boy, she said that even after more than a year of the event, there is a negative emotional impact on the child:

“He is very afraid, he talks about the flood every single day. Every single day he brings up this subject, about what he had and what he no longer has.”

Participant 8

Children may be more susceptible to the stressors that extreme weather events can cause, which can lead to PTSD, depression, sleep disorders, among others. Early exposure to these events can lead to permanent or long-term difficulties, making it difficult to control one’s emotions, and problems with behavior and learning⁽²⁷⁾.

Naturalistic observation and

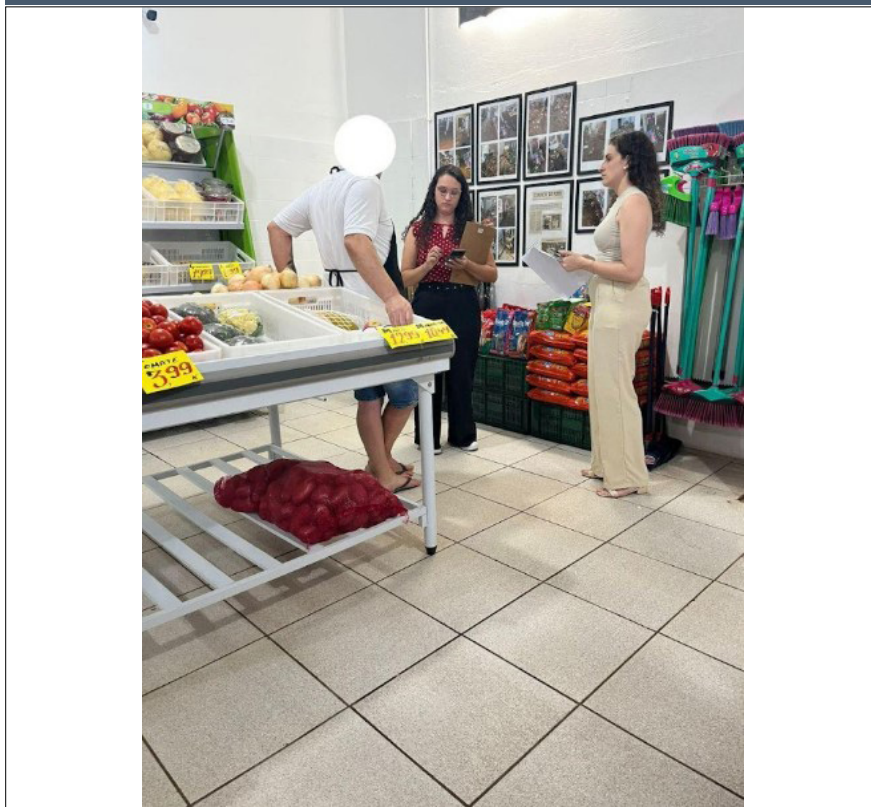
photographic records of the environment

The observation of the behavior of individuals in relation to the environment is an important method for understanding the phenomenon ⁽¹¹⁾, but it is a preliminary technique that can provide clues about the local situation. In addition, for the same authors, the analysis of traces stands out, allowing the understanding and inference regarding the relationships between space and people. To complement this analysis, the research team used photographic records of spaces where the impact of the cyclone on the territory was identified. These images were recorded as an illustrative element of a field diary, adding nuances to the raw results.

The areas where the observations and records were made are points in the city, especially the banks of the Sinos River, which was heavily impacted by the cyclone. In addition, it was the place where the media massively reported the occurrence of damage and material losses.

The first place where the photographs were recorded was a small market. Upon access, the owner was asked for permission to take the photos, in addition to explaining the objectives of the research. In Figures 1 and 2, a photo mural located at the back of the market can be seen. The owner reported that the construction of the mural *"It's not a good memory, but it was created so as not to be forgotten."* Resilience can be identified for the reconstruction of its market that would be opened one day after the cyclone, as reported by the owner. On the other hand, we can infer that the construction of a photo memorial like the one built may be related to the mourning process, highlighted by Franco (18), in an attempt to mobilize people and not confine communities in the past.

Figure 1 - Market With Mural Photos of the Cyclone



Note: Author's source, 2024.

Figure 2 - Photo Wall



Note: Author's source, 2024.

The second place visited was a tire shop. After presenting the research, the team listened to the owner as he recounted the night of the cyclone. As shown in Figure 3, a reliving of the event was observed: after the description, the owner, visually shaken, even more than a year after the event, the water marks on the wall are still present. The traces described by ⁽¹¹⁾ are identified as marks left on the

territory that evoke de-potentiating emotions.

In a second moment, the owner invited the team to go to the back of the tire shop, to a window that overlooks the river. At this moment, the owner, participant 9, becomes emotional and mentions that the environment becomes unpleasant every time it rains: *“Ah, with the river back there it's terrible. It starts to rain, it's terrible.”*

behaviors that were not usual before the event. At the same time, it was possible to verify the self-managed resilience strategies of this community, with each supporting the other in the attempt to recover from this Environmental Disaster.

The number of participants in the Focus Group and the Interviews were the same, however, the number of appearances of the themes proposed for this work in the Focus Group was less prevalent. It can be inferred that the group participants were intent on rebuilding their homes, which was the focus during the group. This observation was also present in the analysis of the Virtual Communication Group (WhatsApp). In any case, it is possible to identify the emotional impacts and vulnerabilities triggered by the cyclone, which also contributed to these considerations.

Among the limitations, access to participants stands out, as many were fragile and access to them became difficult. Furthermore, the time spent at the site makes it difficult to monitor the participants longitudinally in order to understand the extent of their subjective experiences.

Finally, to continue the study, it is suggested that the visual memory of the marks of the flood be deepened, understanding their potential for recovery and reclamation. Likewise, with a view to promoting mental health for this community, a quantitative survey of indicators of prevalent symptoms in the post-disaster period, such as depression, anxiety and PTSD, is necessary to guide the government towards targeted and assertive actions.

Figure 3 - Tire Repair Shop With Flood Marks



Note: Author's source, 2024.

Both records contain data collected on site and were considered only because they aggregate facets of the phenomenon of the emotional impact of disasters. The research team understood that these illustrate small but powerful fragments of the reality faced by this community.

CONCLUSIONS

This study sought to understand how a climate disaster caused by an extratropical cyclone impacted the community emotionally. Based on the results, it is possible to understand the negative impacts represented in the socialization of Disempowering Emotions and Climate Anxiety. The emotional impact on people affected by the cyclone stands out even after a year and a half of the event, when memories of the event still evoke emotions, fears and

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