

SELF-PERCEPTION OF BURN SURVIVORS AFTER THE STRESSFUL EPISODE



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ABSTRACT

To report the perception of burn survivors after the traumatic event suffered. This is an exploratory research, with a qualitative approach. This research was carried out by screening burn survivors registered with the Maranhão Association for Support to Burn Survivors (AMASQ). The study population consisted of a sample of 8 individuals, chosen for convenience. The interviews were carried out via video call via the Google Meet platform, recorded on a smartphone device and transcribed in Microsoft Word 2007. Collection took place using an interview script and participants were randomly coded. To support data analysis, the IRAMUTEQ software (Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires) was used, anchored in the R software and the Python programming language. Regarding gender, 4 participants were female, 4 were male, with ages ranging from 19 to 56 years. The survivors' education level ranged from incomplete high school to higher education. The analysis of the corpus textus presented 232 text segments (ST), with 7822 occurrences and 704 distinct words. After processing, the dendrogram was created with 5 classes. The participants in this research have various psychological, motor, social and physical dysfunctions, such as extreme sensitivity to exposure to the sun, to the detriment of the burn accident suffered. Among the main ones, feelings such as fear, insecurity, anxiety, depression, sadness, crying and lack of interest in day-to-day activities were mentioned.

Keywords: Perception. Burns. Survivors. Stressful event.

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INTRODUCTION

Burn injuries are among the most painful types of trauma, but the life expectancy of these patients has increased due to the development of treatment for these individuals. However, traumatic and painful experiences still remain in the daily lives of survivors, such as wound cleaning, debridement, dressing changes, and physiotherapy (Luz et al., 2021).

In addition to the physical injury, characterized by the wound and loss of skin, the damage caused by a burn brings scars that can cause deformities, scar retractions that lead to numerous functional limitations. From this perspective, another damage of this type of injury is the psychological damage, which is equally comparable to the physical one, since this trauma can cause profound psychological changes (Souza et al., 2021).

The most frequently encountered negative mental phenomena in patients after burn accidents are depression and anxiety disorders, especially PTSD (Post-Traumatic Stress Disorder). Burn injuries have severe potential to be classified as a stressful event and to be the etiology of PTSD. This disorder is characterized by a set of reactions including reliving, avoidance, and numbness, and persistent symptoms of increased excitability, secondary to the experience of a traumatic stressful event. About 22 to 45% of burn patients who were hospitalized developed a psychiatric disorder, a significantly higher percentage than that identified in the general population (Rodrigues et al, 2019).

In addition, burn sufferers feel uncomfortable with the scars, which leads them to avoid exposures, with the intention of hiding them, avoid social contacts, socializing with family members, and even avoid leaving the house. Thus, such issues can considerably affect the subject's psychic health (Macedo, 2018).

In addition, the skin of the burn survivor does not have the same capacity for hydration, thermoregulation, when compared to skin without burns, which limits the performance of various activities, such as exposing oneself to the sun, shopping on a daily basis, etc. Thus, the treatment should encompass physical and psychological aspects, aiming at the functional recovery of the body, together with its psychological aspects (Vana, 2017).

Therefore, it is of paramount importance to study the alterations in the mind of these victims, as these impacts can appear late, characterizing themselves as post-traumatic symptoms.

OBJECTIVE

To report the survivors' perception of burns after the traumatic event suffered.

METHODOLOGY

This is an exploratory research, with a qualitative approach.

This research was carried out through the screening of burn survivors registered in the Maranhão Association for the Support of Burn Survivors (AMASQ), a reference in the fight for burn awareness and prevention located in the municipality of Caxias – MA, which welcomes survivors from all over the state in order to contribute to rehabilitation and legal rights in cases that need compensation (Maranhão, 2022).

The study population was selected by convenience, and is composed of a sample of 8 individuals registered by the association who are being monitored by the executive board. Individuals traumatized by burns of both genders, aged between 5 and 69 years (adults of working age), and who are presenting burn injuries without restrictions as to the causative agent, were included in the study. Survivors who self-inflicted trauma with the intention of suicide or those who refused to participate in the interview and individuals under 5 years of age, who have inability to communicate or limitation in verbalization, were excluded.

The interviews were conducted through a video call through the Google Meet platform or, when possible, the contact was made in person and were recorded on a smartphone device and lasted an average of 10 minutes. Subsequently, the interviews were transcribed in Microsoft Word 2007 and focused on the meaning given to the situation experienced, without influence of the researcher's conceptions. The individuals were contacted through telephone calls, randomly chosen through the registration of the Maranhão Association for the Reception of Burn Survivors (AMASQ).

The answers were collected in December 2023 and January 2024, through an interview with a semi-structured script and the participants were randomly coded [Survivor 1 (S1), Survivor 2 (S2),...] to ensure the anonymity of the interviewees.

The data collection instrument (Appendix) used was the open interview, defined as a way of collecting information based on the interviewee's free speech. It is assumed that the informant is competent to clearly communicate his experience, provide reliable information and manifest the meaning of his acts in the context in which they are carried out, revealing both the historicity of the acts, conceptions and ideas (Chizzotti, 1991).

The script was composed of questions about the social profile: name, age, level of education and municipality of residence. In the open questions of interest in this study, the following questions were used: What psychological symptoms did you start to feel after the burn accident that you survived? Are you easily frightened? Do you feel nervous or worried constantly? Do you have trouble thinking clearly about your daily life? After the accident, did you feel sad or did you cry more than usual? Can you do normal day-to-day activities? If not, what does it cause you? Did you think you were incapable or have you felt useless? Have you lost interest in things? Do you feel like a person of value? Do you respect yourself? Are you proud of what you are? Have you ever had thoughts of ending your own life?

To support the analysis of the data in this research, the *IRAMUTEQ* (Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires) *software* was used. This software allows different processing and statistical analysis of produced texts, anchored in the *R software* and in the python programming language. In 2009, Pierre Ratinaud developed it in the French language, but he currently has complete dictionaries in other languages. IRAMUTEQ enables five types of analyses: classic textual statistics; research of group specificities; descending hierarchical classification; similitude analysis and word cloud. It should be noted that the use of software is not a method of data analysis, but a tool to process them, therefore, it does not conclude this analysis, since interpretation is essential and is the responsibility of the researcher (Kami et al, 2016).

This interface allows, based on the original *corpus*, the retrieval of text segments and the association of each one, which allows the grouping of statistically significant words and the qualitative analysis of the data. In addition, the use of a computer program had the advantage of coding, organizing and separating information, which allowed the quick location of the entire text segment used in qualitative writing.

The research was submitted to the Human Research Ethics Committee (CEP), as decided by the National Health Council, by the guidelines and regulatory standards for research involving humans, proposed in Resolution No. 466/2012 and approved according to opinion number 5,967,716 (Annex).

RESULTS

Regarding the gender of the participants, 04 were female, 04 male, with ages ranging from 19 to 56 years. The municipalities of residences varied between Caxias (3),

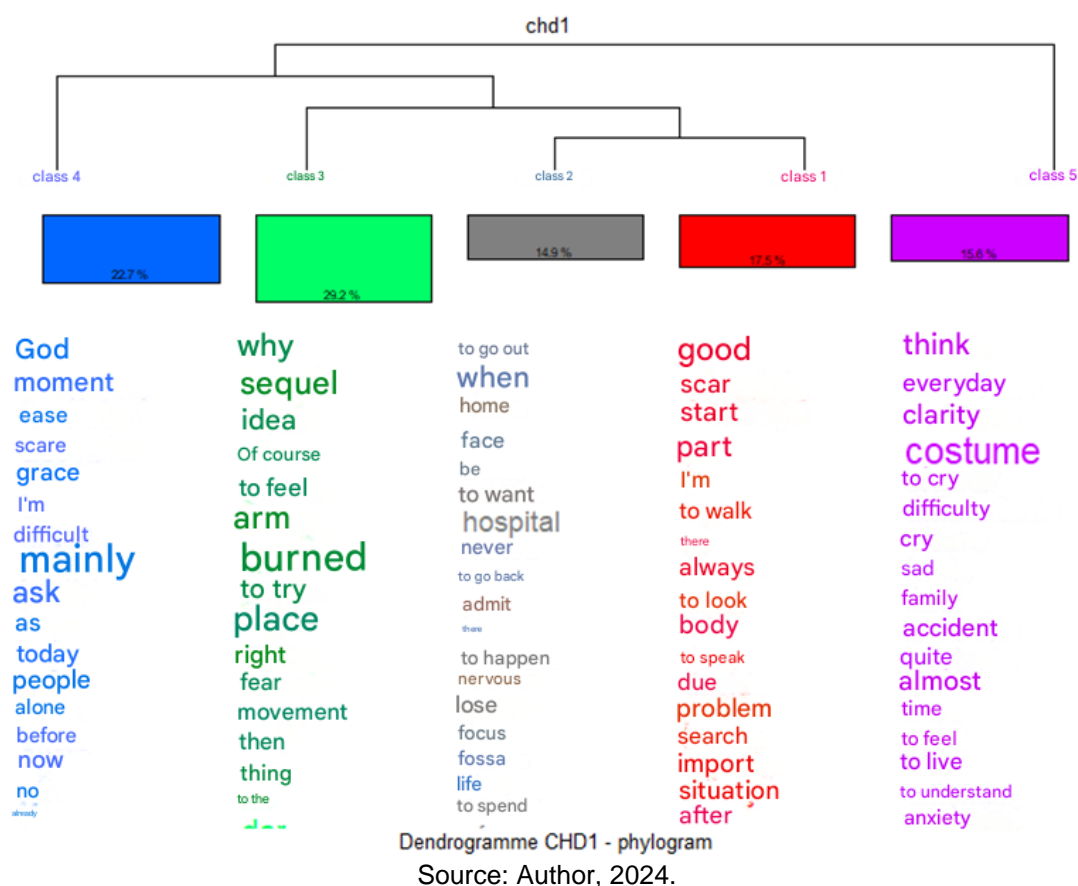
In the analysis of the *corpus textus* of all interviews, the presence of 232 text segments (TS) was observed, with 7822 occurrences and 704 distinct words, mentioned only once. The analysis by classical textual statistics showed the most frequent terms: thing, accident, day, life, difficulty and burn (Figure 1).

[illegible]

These words appear in the center of the word cloud, evidencing the greater frequency in the interviews, with meanings related to the difficulties imposed on the daily life by the burn accident suffered by these individuals.

After processing and grouping according to the occurrences of words, CHD creates the dendrogram of the classes. This figure, in addition to presenting the classes, demonstrates the connection between them, as they are associated with each class and has a different color (Figure 2).

Figure 2 - Dendrogram of each class and words with greater chi-square (χ^2) provided by the IRAMUTEQ software.



The reading of the relationship between the classes carried out in this step is done from left to right. In the dendrogram, the *corpus* was divided into two *subcorpus*. In the first, class 4 was obtained, which corresponded to 22.7% of the total. In this same *subcorpus*, there was a second subdivision, which included class 3 (29.2%) and 2 more *subcorpus* with class 2 (14.9%) and class 1 (17.5%). From the other *subcorpus*, class 5 was obtained, which corresponds to 15.6% of the *total corpus*.

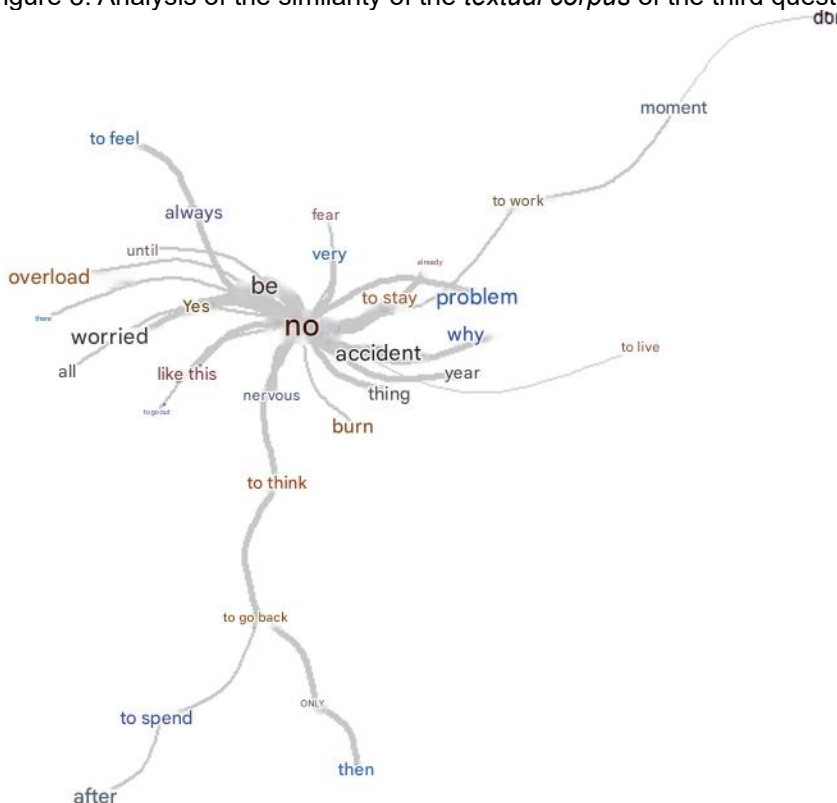
The *textual corpus* was divided into 10 parts. Class 2 corresponding to "Physical, psychological and emotional signs", which refers to the sensations and feelings that individuals began to present after the accident suffered, it was found that the interviewees mentioned symptoms such as fear, anxiety, nervousness, low self-esteem, insecurity, etc. This *corpus* presented 24 segments of texts (TS), 202 non-repeated words about the feelings and sensations felt by the victims.

Survivor 3: Insecurity... (pause). The insecurity of being able to go out on the street and people look at me and question me or ask themselves: "Wow, what happened?" "Do you have any disease that catches someone and so on?" (...)

Survivor 5: Regarding psychological symptoms, I relate a lot to my self-esteem. I've always been a person who looked a lot from the perspective (...) of taking care of having a perfect body, of always 'being' in that mood: Ah! Let's keep our health up to date, so I think that for me it was my biggest 'psychological blow' was seeing my body like that, that's what gets me the most on a daily basis (...).

Still in class 2, when asked if they felt nervous or worried constantly, the similarity analysis (21 ST) evidenced the terms most evoked in the interview in a contextualized way, which means that the word "no" was more evoked, however, it is closely linked to the words "being", "yes", "worried", "nervous" (Figure 3).

Figure 3. Analysis of the similarity of the *textual corpus* of the third question.



Source: Author. 2024.

These words make an interconnection showing that worry and nervousness are more intense situations close to the accident and that, over time, these characteristics tend to regress. However, some disorders persist after the trauma.

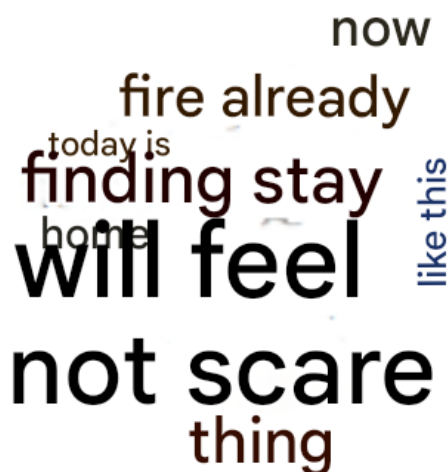
Survivor 2: yes, also, I don't feel safe in environments that have a lot of people, I feel like I'm always like that... Attentive to everything, to any movement, I am always afraid, I feel afraid, a constant fear (...).

Survivor 4: Nervous, not very worried, but nervous yes. It's bad to spend this much time without working, after this accident I never worked again, I stay at home directly, my wife works alone, I get worried about it, thinking that she will get tired somehow. it's bad (...).

Survivor 8: No... I don't feel it, it's just one-off situations. I felt worried at the time, like that, in the early years. It's because the accident has been going on for 10 years, it was in 2013 (...).

Within class 4 "Post-traumatic alertness", the textual corpus that analyzes whether the individual started to be frightened easily due to the trauma, we obtained 12 ST. The word cloud (Figure 4) of this "corpus" had the word "no" in its center, however, it was found that of the 8 survivors, 4 are still easily frightened.

Figure 4. Word cloud of the *textual corpus* of the second question.



Source: Author, 2024.

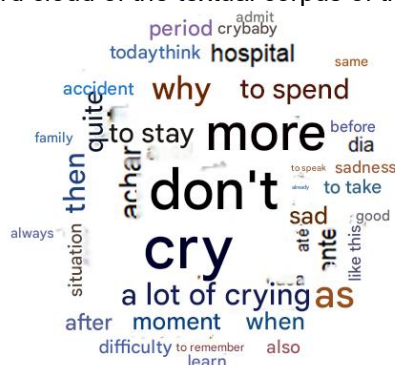
Survivor 8: "(...) I was easily scared at the time, now I think I've improved a lot, the sound, especially the balloon. When it goes deflating, when someone blows up a balloon and releases it (noise with the mouth), it bothers me, to this day, the siren, not so much that of an ambulance, it's more that of a firefighter, that firefighter joke, to this day it remains, I get emotional."

Survivor 4: "Yes. Especially after the burn accident, yes, anything I feel... I didn't feel anything, but now I'm feeling nervous, scared by things, any little thing is scaring me now. A very bad feeling."

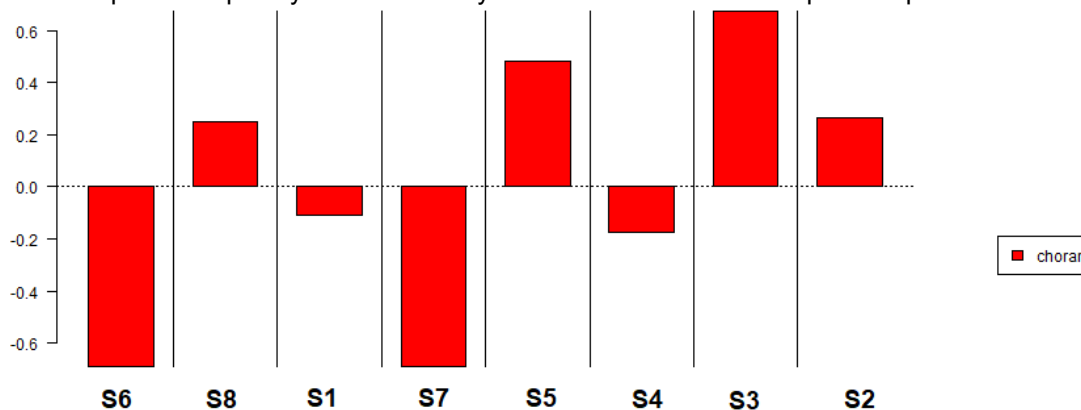
In class 5 "Emotional and concentration imbalances", difficulty in thinking clearly, something common among burn survivors, was strongly related to physical disability.

Survivor 1: Right after the accident, yes, (...) there were sequelae that I had no movements, I couldn't walk properly, move my hands, at that time when I had just left the hospital I had difficulty thinking about everyday life, because I had difficulty performing these daily tasks alone, but nowadays I didn't, I regained movement, I recovered almost 100% of movement in my legs, hands and everything, I don't have that difficulty anymore.

Figure 5. Word cloud of the textual corpus of the fifth question.



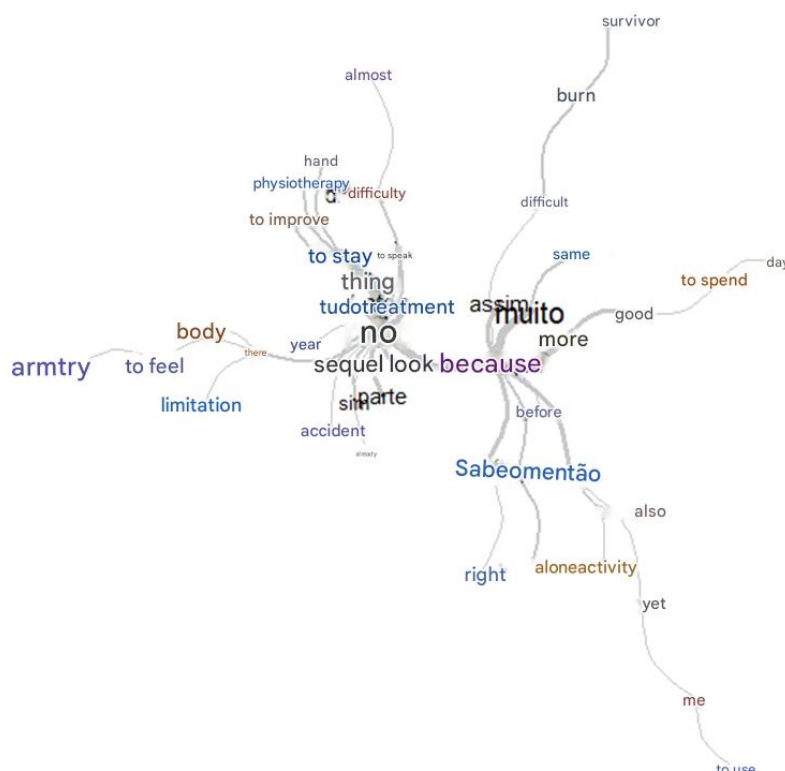
Graph 1. Frequency of the form "cry" in the answer to the fifth question per survivor.



Source: Author, 2024.

Closely related to class 5, class 3 addresses "Functional capacity", thus, when questioned about the ability to perform simple activities in daily life, the survivors showed that they were incapacitated. The textual corpus presented 30NT and 215 non-repeated forms throughout the text. When performing similarity analysis, which expresses the possibility of units occurring in combination with others, its result designated a strong connection between the word "no", "difficulty", "limitation", etc (Figure 6).

Figure 6. Analysis of the similarity of the textual corpus of the sixth question.



Source: Author, 2024.

Survivor 4: (...) I can't bend down, put on a pair of sneakers, I feel a little difficulty, in the area here on the chest, the burn, it's still a little inflamed, I feel this difficulty, to get down, to get up, but it's getting better, every day that passes it gets better. I feel so many feelings, sadness really, I had never gone through this in my life and go through such a tragic accident like this (...).

This disability is associated with the physical limitations caused by the burn, especially in the limbs, as pointed out by the survivors. Furthermore, the feeling of uselessness was linked to the interaction and social and affective coexistence of the subjects.

Survivor 3: (...) So with this limitation, it frustrates us. We feel paralyzed at that moment, which we want to do, but the pain is intense in the arm, I really still feel a lot of pain in the arm (...).

Survivor 4: Not incapable, but useless yes (...) during this recovery period, it's bad to stay at home without being able to do anything and I worked a lot (crying) (...).

Survivor 5: "Yes! Most of the time. It happens a lot at home. My parents really want me to go out with them, they want me to go with them, they want to show that their son is there, that he went through that, they want me to go to events with them, and many of them I even went, I participated, but I'm afraid to go to these places, because many times I have to go in shorts, sometimes it shows my scars (...).

Worthlessness and inability are closely linked to loss of interest in doing things. This reveals the physical and psychosocial impact caused by the burn accident.

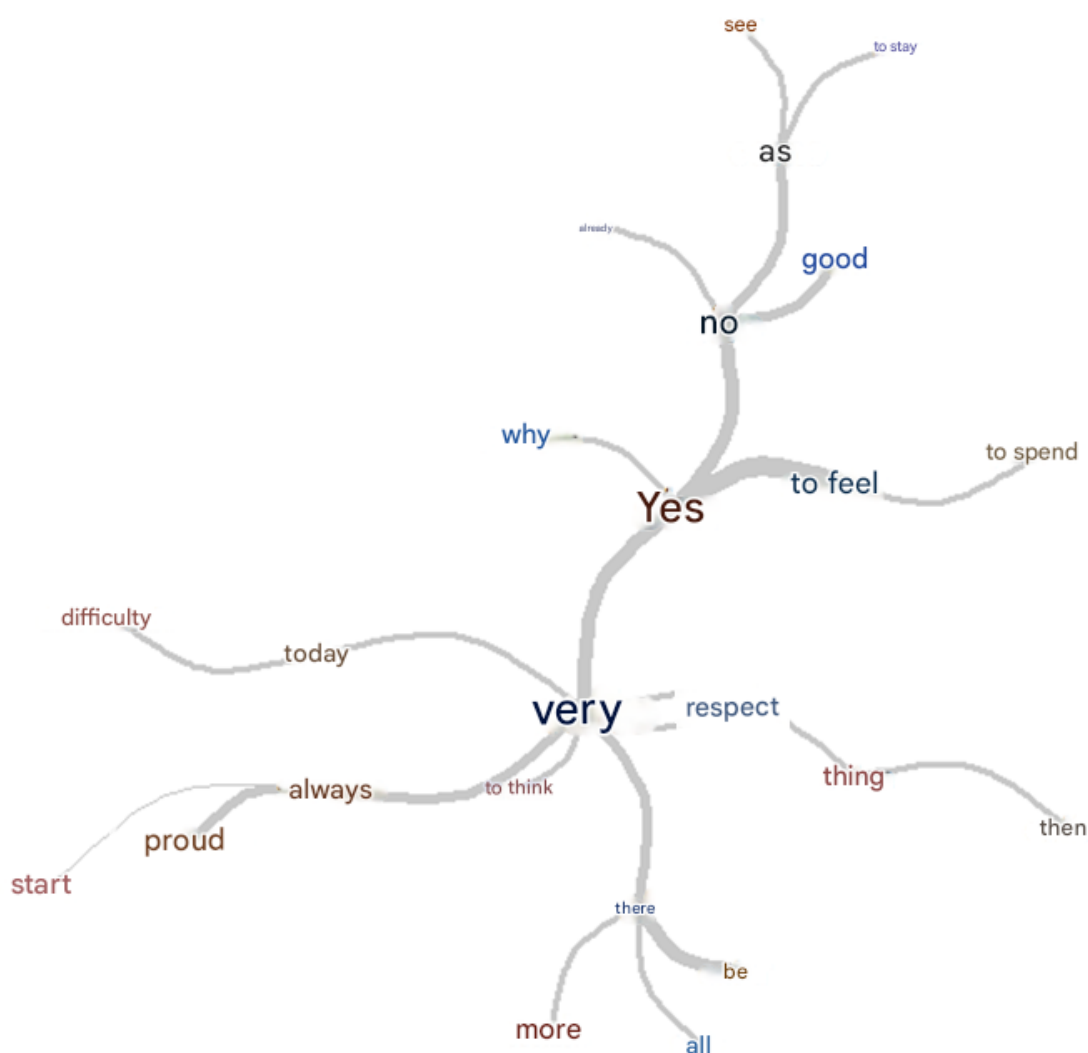
Survivor 1: Yes, as I said, I didn't want to leave the house, I didn't want to socialize, I don't know... going to have a snack on the street, going to a restaurant, I didn't have those desires.

Survivor 5: In some things, yes, the interest of, I have always been a person who likes to go out, I liked to go out a lot, my motto is to live life, enjoy (...).

Survivor 8: I lost! At that time I lost interest in everything, at that time I was getting to know a person, so I didn't even want to know about that person anymore (...)

In class 1 "Perception of self-image", the textual corpus evidences the perception of pride in oneself showed that individuals feel extremely proud and happy for having survived and managed to adapt to the limitations imposed by the trauma caused by the burn. The statistical and similarity analysis of the text showed 20 NT and 110 non-repeated forms. (Figure 7).

Figure 7. Analysis of the similarity of the *textual corpus* of the ninth question.



Source: Author, 2024.

Finally, the survivors were asked about their desire to end their own life at some point after the trauma suffered.

Survivor 1: Yes, even during the hospitalization (...) 5, 6 months there that I was only in the hospital, that I had no movements, I didn't walk, I didn't do anything on my own... And to see that there was no progress in healing, in treatment, in short... That's when I started to develop this depressive condition and manifest thoughts, yes, also talk to the people who were accompanying me (...) I didn't try because I didn't have any movements, I couldn't do anything (...).

Survivor 3: Yes, the hardest time of my life was when I had depression (...) My marriage had fallen apart and after the burn it really entered even more of a terminal phase (...) And for a moment I almost threw myself off the bridge, I didn't think about my son at the time, I didn't think about anyone else and God was so merciful at the moment that he sent an angel of God to give me a single hug and that took me out of the deep end (...).

DISCUSSIONS

The daily difficulties faced by burn survivors revolve around, from psychological to motor aspects. From this perspective, according to Araújo (2022), the main motor sequelae are intense muscle loss and weakness, hypertrophic scars, and contractures that can trigger physical impairment, therefore, limiting the range of body movement, reducing their physical capacity, which hinders the individual's social reintegration, corroborating the testimonies of the survivors of this study.

In addition, the individuals interviewed numbered several psychological symptoms after the trauma. This is in line with the results of other studies, which point out that many patients feel shame or inferiority in their interpersonal relationships due to their own altered and distorted body image in their vision. Thus, post-traumatic stress disorder (PTSD), anxiety, depression, and other mental disorders are easily found in these patients, in the short and long term (Polachini, 2022).

PTSD is a disorder that has numerous changes in the patient, among them, there are changes in mood, behavior, sleep, body, cognition. For example, survivors report being always alert, afraid, feeling unsafe when going out on the street, loss of interest or pleasure in daily activities, or even suicidal thoughts (Santos et al, 2023).

Regarding physical disability, this is mainly due to the physical alteration imposed by the new condition. A study carried out with 36 participants in the state of Paraná showed that survivors reported that this physical disability causes depressive symptoms such as crying, sadness, fear, loneliness. In addition, after the accident, many indicate fear about reconstructive surgeries, the separation of spouses and family members, which somatizes

and makes the treatment of the survivor even more difficult. Such reports are commonly observed in the interviews of this study, proving the psychic manifestations (Moraes and Marcolan, 2023).

Furthermore, the same authors show that physical disability causes the loss of autonomy, limitation and dependence to perform daily activities and self-care, consequently, the feeling of guilt and uselessness are evoked by these subjects. In view of this, social, family and professional support from professionals who work in this area of mental health is of paramount importance in order to resolve this feeling of inferiority and assist in social reintegration.

CONCLUSIONS

The participants of this research, assisted by the Maranhão Association for the Reception of Burn Survivors, have several psychic, motor, social and physical dysfunctions such as exposure to the sun, to the detriment of the burn accident suffered. Among the main ones, feelings such as fear, insecurity, anxiety, depression, sadness, crying and being discouraged by daily activities were mentioned.

The application of this semi-structured questionnaire demonstrated that the survivors have gone through and are going through numerous difficulties related to work, recreational and leisure activities, as a result, intrusive and suicidal thoughts were recurrent at certain times in their lives. However, it was also possible to observe that, even though they were affected by a highly disabling accident, these individuals are grateful for having survived, declared mainly in statements about religiosity and spirituality.

Therefore, it is evident that the multidisciplinary team that provides care to these survivors should be attentive to their behavior, in order to identify possible emotional traumas and start psychological treatment as soon as possible.

Finally, recognizing the importance of health education in order to avoid these accidents, whether in homes or on the streets, the rates will tend to decrease.

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ATTACHMENT

Interview script

Name:

Age:

Place of residence:

Education level:

1. What symptoms did you start to experience after the burn accident you survived?
2. Are you easily frightened?
3. Do you feel nervous or worried constantly?
4. Do you have trouble thinking clearly about your daily life?
5. After the accident, did you feel sad or did you cry more than usual?
6. Can you do normal day-to-day activities? If not, what does it cause you?
7. Do you think you are incapable or have you felt useless?
8. Have you lost interest in things?
9. Do you feel like a person of value? Do you respect yourself? Are you proud of what you are?
10. Have you ever had thoughts of ending your own life?