



**Bruna de Moura Côrtes Coutinho**

**Analysis of the demands of patients at the  
Service of Applied Psychology at PUC-Rio**

**Dissertação de Mestrado**

Dissertation presented to the Programa de Pós- graduação em Psicologia of PUC-Rio in partial fulfillment of the requirements for the degree of Master em Psicologia.

Advisor: Prof. Thomas Eichenberg Krahe

Rio de Janeiro,  
February 2023

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To the 15 million victims of COVID-19, to their families and all others who have had their lives affected by the pandemic,

To the healthcare professionals who fought tirelessly on the front lines,

To the scientists, teachers and thinkers who did not surrender to the insanity of those who denied us the pandemic.

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Firstly, to my parents, who not only believed in me, but invested in my dreams with their eyes closed. Thank you for the way you taught me to see the world, for all the effort and dedication - for all the love. Together, I would like to thank my stepmother, Patrícia, for her love, trust, support and all her teachings. My grandmother Jane and my grandfather Flávio for all their love and care. Finally, to my brothers who help me laugh everyday with life and eventually at myself.

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## Abstract

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The COVID-19 pandemic has had unprecedented impacts on individuals and communities around the world. A matter of great concern is the impact of the pandemic on mental health. The isolation, fear and uncertainty caused by the virus has led to increased rates of anxiety, depression and other mental health issues. Concerns about the increasing prevalence of psychological disorders are already leading countries to include mental health and psychosocial support in their COVID-19 response plans, but despite this, major gaps and concerns remain. The multiple stressors triggered by the virus, in addition to the severe interruptions in public services, have left serious gaps in the care of those who need it most. In addition to the worsening and generalization of pre-existing mental health conditions, there is now also a need to accommodate newly developed issues. Our objective is therefore to investigate the main reasons that led patients from the Service of Applied Psychology at PUC-Rio to seek psychological treatment before (2019) and during the pandemic (2020 and 2021). Through a lexical analysis of the psychological demand forms, we intend to trace the possible transitions and aggravations between psychological demands of adults (article 1) and families (article 2) using the IRaMuTeQ software and the Reinert method, which qualitatively and quantitatively analyzes the transcribed reports. Through this analysis resource, it is possible to start mapping and investigating the subjective complaints of these patients, their development and their correlations.

## Keywords

Coronavirus; SARS-CoV-2; mental health; IRaMuTeQ; therapy; complaint; family; family dynamic.

## Resumo

Coutinho, Bruna de Moura Côrtes; Krahe, Thomas Eichenberg. **Análise das demandas de pacientes do Serviço de Psicologia Aplicada da PUC-Rio**. Rio de Janeiro, 2023. 79p. Dissertação de Mestrado – Departamento de Psicologia, Pontifícia Universidade Católica do Rio de Janeiro.

A pandemia do COVID-19 teve impactos sem precedentes em indivíduos e comunidades em todo o mundo. Uma questão de grande preocupação é o impacto da pandemia na saúde mental. O isolamento, o medo e a incerteza causados pelo vírus levaram ao aumento das taxas de ansiedade, depressão e outros problemas de saúde mental. As preocupações com o aumento da prevalência de distúrbios psicológicos já estão levando os países a incluir a saúde mental e o apoio psicossocial em seus planos de resposta à COVID-19, mas, apesar disso, permanecem grandes lacunas e preocupações. Os múltiplos estressores desencadeados pelo vírus, somados às graves interrupções nos serviços públicos, deixaram sérias lacunas no atendimento de quem mais precisa. Além do agravamento e generalização de condições de saúde mental pré-existent, agora também há a necessidade de acomodar questões recém-desenvolvidas. Nosso objetivo é, portanto, investigar os principais motivos que levaram os pacientes do Serviço de Psicologia Aplicada da PUC-Rio a buscar tratamento psicológico antes (2019) e durante a pandemia (2020 e 2021). Através de uma análise lexical dos formulários de demanda psicológica, pretendemos rastrear as possíveis transições e agravos entre demandas psicológicas de adultos (artigo 1) e famílias (artigo 2) utilizando o software IRaMuTeQ e o método Reinert, que analisa qualitativa e quantitativamente as transcrições relatórios. Por meio desse recurso de análise, é possível começar a mapear e investigar as queixas subjetivas desses pacientes, sua evolução e suas correlações.

## Palavras-chave

Coronavírus; SARS-CoV-2; saúde mental; IRaMuTeQ; terapia; queixa; família; dinâmica familiar.

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## I. THEORETICAL BACKGROUND

### 1. The impact of COVID-19 on mental health

Since the outbreak of the COVID-19 pandemic, millions of lives have been lost and the daily life of the general population have been drastically affected (Heitzman, 2020). In addition to the profound economic impact (Maital & Barzani, 2020), studies already highlight its consequences on mental health (Penninx et al., 2022). According to the World Health Organization (WHO), the global prevalence of anxiety and depression increased by 25% in the first year of the pandemic. This psychological impact stands out not only on those who lived on the front line, such as doctors and nurses (Maduke et al, 2021), but also on severe cases of COVID-19 (Rogers et al, 2020), on the risk group (Paes et al, 2021), on people diagnosed with long-term COVID (Silva et al, 2021), as well as on the low-income population (Kola et al, 2021).

In order to contain the spread of the virus, restrictive measures were recommended by the WHO and implemented by various government leaders around the world. Restrictive measures was intensified in Rio de Janeiro from April to July 2020 with restrictions on the movement of people and social isolation imposed by municipalities (Silva and Silva, 2020), which changed not only relations with the work, but also their sociability, personal relationships and daily routine (Gullo, 2020). It is known that most of the psychological effects highlighted in research are secondary to regulatory, socioeconomic and psychosocial changes associated with the pandemic (Roy et al, 2021), which makes it necessary to take a closer look at these changes and their impacts.

As a health crisis, COVID-19 generated a wave of fear, insecurity, loneliness, and grief worldwide (Albuquerque and Santos, 2021; Goveas and Shear, 2020). It is possible to account a greater incidence and severity of disorders of cognitive, psychosocial, and social nature (Albuquerque and Santos, 2021; Ritchie et al., 2020). We can cite as an example the increase in cases of anxiety, depression, obsessive-compulsive disorder, domestic violence and drug abuse (Albuquerque and Santos, 2021; Boserup et al., 2020; Bradbury-Jones and Isham, 2020;

Campbell, 2020; Davide et al., 2020; Kofman and Garfin, 2020; Nicolini, 2020; Sediri et al., 2020; Volkow and Blanco, 2020). Mental disorders are known to be prevalent globally and cause a very high disease burden (Penninx et al., 2022). Those can be extremely disabling, deadly, and costly, presenting a great impact on the present and future health and quality of life of affected persons, their caregivers, and society (Craske and Stein, 2016; Smith, 2014; Mchugh and Weiss, 2019; Treasure et al., 2020). Moreover, it is known that these consequences were even more severe in people with a lower socioeconomic status (Bassey et al, 2022).

For most common mental disorders, environmental stressors play a major etiological role (Penninx et al., 2022). In that way, the impact of a disruptive and unpredictable pandemic and its circumstances may display an even higher degree of distress in the individual, especially in those with fewer resources that depend on social and public institutions (Yoshikawa et al., 2012). Because economically vulnerable populations already tend to deal with distress on a daily basis, they have been affected by the pandemic more than others (Lewis et al., 2022). The sum of these aspects further threatens the mental health of Brazilians and represents a major challenge for psychology services.

Since poverty is understood as a risk factor for mental health and quality of life (Yoshikawa et al., 2012), when it comes to the pandemic effects, we need to consider the impracticality of social distancing and quarantine measures by this specific social. The reorganization of health services, social restrictive measures in addition to people's fear of being infected have led to a series of consequences for both patients and their families (Zullo et al., 2021). This can be an even bigger problem when considering developing countries such as Brazil, where the public and private health system presented great difficulty in dealing with the high number of people who needed medical services in return for the limited number of hospital beds. This leads to yet another stress factor for the low-income population, who have even less access to health resources and were more exposed and less protected during this time. To further concern this circumstance the mental health consequences of the COVID- 19 crisis are likely to be present for a longer period of time and may also peak later than the actual pandemic (Sher, 2020).

## 2. Restructuring the family dynamic

On one side research already point out how children and adolescents have been affected by the disruption in daily life routine as a result of social isolation and their unseasoned ability to conceive and comprehend the short- and long-term consequences of this outbreak (Spinelli et al., 2020; Crescentini et al., 2020). In addition to the fear or even failing to scale the problem and circumstances, they were kept at home for over a year with their family members.

On the other side, the pandemic represents significant challenges for parent and couples' relationships, interfering with adaptive relationship processes and risking relationship distress (Pietromonaco & Overall, 2022). Some factors that interfered and shaped the development of the new family dynamics involve the quality of interpersonal relationships that individuals have, coping skills developed before the pandemic and mental disorders that already existed before the pandemic. (Pietromonaco & Overall, 2022). During the reorganization of the new routine, adults had to deal with working from home in addition to children's management, besides being an exhausting task, it represents a challenge for the great majority of parents (de Figueiredo et al., 2021).

Some of the ways that the pandemic is now affecting families' mental health include post-traumatic stress, resuming normal activities, financial strain and disruptions to mental health treatment. Families reported loss of community and freedom of movement in response to lock down measures (Luttik et al, 2020). No doubts the pandemic consequences are likely to be longstanding, in part because of the ways in which contextual risk permeates the structures and processes of family systems and dynamic (Prime, Wade & Browne, 2020).

Family dynamics concerns in all the ways that individuals interact with each other. This interaction, depending on its functionality, healthy or not, influences the entire structure and relationships between members (Luttik et al, 2020; Pietromonaco & Overall, 2022). As we understand that individuals are not completely separate units, but rather part of a family context, it is essential to establish views of the children, adolescents and family in general. The risk of generalizing fears and anxieties in addition to breaking the bond and quality of

relationships between family members are some of the concerns and consequences of the pandemic that may last in the long term. Understanding the main clinical demands of the family members may be a better way to promote child adjustment through a cascading process involving caregiver well-being and family processes (i.e., organization, communication, and beliefs) (Prime, Wade & Browne, 2020).

## II. OBJECTIVES

This thesis is composed by two articles: the first one aims to investigate and compare the reasons why adults with low income and socioeconomic status sought psychological help before and during the COVID-19 pandemic, the second one explores mental health demands of families, whether for the treatment of children, adolescents, couples or the family in general. Both studies analyzed report forms from individuals that came to the Service of Applied Psychology (SAP) of PUC-Rio and, using a quanti-qualitative approach, have the following main objectives:

- Investigate and analyze the course of complaints brought by SAP patients before and during the pandemic.
- Discuss the hypothesis that the COVID-19 pandemic is related to a greater plurality of complaints and greater intensity of them.

### III. ARTICLE SECTION



## ARTICLE 1

### **Tracking demands for seeking psychological help before and during the COVID-19 pandemic: a quanti-qualitative study**

Manuscript submitted to the Psychiatry Journal (ID #6150211) and is currently under review.

Bruna M. C. Coutinho, Luis F. C. Anunciação, J. Landeira-Fernandez, Thomas E. Krahe\*

## ABSTRACT

*Introduction.* The COVID-19 pandemic has placed unprecedented burdens on individuals and communities around the world. One area of significant concern is the impact of the pandemic on mental health. The isolation, fear, and uncertainty caused by the virus has led to increased rates of anxiety, depression, and other mental health issues. The pandemic has also had a disproportionate impact on individuals and communities with low income and socioeconomic status. To shed light on the consequences of the pandemic on the mental health of individuals from minorities and low-income areas, we investigate the main reasons that led patients, who were referred to a social clinic of a private university in Rio de Janeiro, to seek psychological treatment before (2019) and during the pandemic (2020 and 2021).

*Methods.* We conducted a quanti-qualitative study with a lexical analysis that evaluated 549 complaint forms of patients seeking treatment in these two distinct periods. *Results.* The Descending Hierarchical Analysis and Correspondence Factor Analysis identified different clusters for before and after the pandemic. They not only distinguish as to their nature, but also as to proportion. Family dynamics and communication factors play a dominant role in the reason for seeking therapy and psychological treatment. Additionally, our study suggested an increase in anxiety and panic attacks among other mental health issues associated with grief and losses during the pandemic years. *Discussion.* Based on these analyses, we can begin to identify a few changes in the main demand and redirection of complaints of patients during the period of COVID-19. Long-term health problems may arise over the years and following up on the evolution of demands in mental health service institutions is an important indicator of what we should be aware of when dealing with economically vulnerable populations.

**Keywords:** Coronavirus; SARS-CoV-2; mental health; IRaMuTeQ; therapy; complaint.

## 1. INTRODUCTION

The COVID-19 pandemic has had a profound and far-reaching impact on society, affecting nearly every aspect of life [1]. The measures taken to slow the spread of the virus have drastically altered the life of the great majority of the population worldwide, and hence has been termed as a global health emergency [2, 3]. In particular, the increase in mental health issues related to the COVID-19 pandemic has been an issue of major concern [4]. The isolation that comes with lockdowns, the fear of contracting the virus, disruption of daily routine and activities, grief and trauma associated with the loss of loved ones, and limited social interactions has led to an increase in mental health issues such as anxiety and depression [5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15]. Moreover, studies have shown that individuals who have lost their jobs or experienced financial hardship because of the pandemic are at a higher risk of experiencing depression, anxiety, and stress [16, 17].

In addition to the health and economic impacts, the COVID-19 pandemic has also highlighted and exacerbated existing social inequalities in developing countries [18, 19]. For example, vulnerable populations such as the poor, informal workers, and those living in slums have been disproportionately affected by the pandemic, as they often lack access to adequate healthcare, housing, and other basic necessities [2, 16]. Brazil is no exception to this rule [20]. The country was considered one of the epicenters of the COVID-19 pandemic, and the health-care system was overwhelmed by the number of patients needing care [20, 21]. Additionally, the pandemic has highlighted and exacerbated existing social and economic inequalities, with low-income and marginalized communities being disproportionately affected by the virus [2, 22].

Therefore, the characterization of the impact of the COVID-19 pandemic on the mental health of vulnerable populations may prove to be important for our understanding of the consequences associated with this global health problem. To shed light on this issue, we employed a quanti-qualitative approach to investigate and compare the reasons why individuals with low income and socioeconomic status sought psychological help before and during the COVID-19 pandemic. By investigating whether the reasons for patients seeking a social clinic have changed, we intend to contribute to the literature and better inform health services regarding conduct, planning, risk factors and susceptibility of cases.

## 2. MATERIAL AND METHODS

### 2.1 Sample

A total of 549 patient's reports, collected between March, 2019 and December, 2021 at the Service of Applied Psychology (SAP) of the Pontifical Catholic University of Rio de Janeiro (PUC-Rio), were used in this study. Seventy-three percent of the total sample were women and 23% were men. The mean age of the participants was 38,52 ( $\pm$ SD = 15,23) with an age range of 18–84 years. All participants belonged to medium to low socioeconomic segments of the Rio de Janeiro population. The SAP at PUC-Rio has been providing psychological assistance services at a symbolic price to individuals of low socioeconomic backgrounds of Rio de Janeiro for years [23]. Demographic data is summarized in **table 1**.

**Table 1.** Demographic data of individuals that sought psychological help before and during the COVID-19 pandemic

		BEFORE		DURING	
				N	%
		N	%		
<b>Sex</b>	Men			70	
		55	21%		24%
	Women	204	79%	220	76%
	Total	259	47%	290	53%
<b>Age</b>	Missing data	0	0,00%		
				14	4,83%
	18 - 24	54	20,85%	66	22,76%
	25 - 34	61	23,55%	77	26,55%
	35 - 44	40	15,44%	59	20,34%
	45 - 64	85	32,82%	64	22,07%
	65 or more	19	7,34%	10	3,45%
<b>Education</b>					
	Missing data	2	0,77%	9	3,10%
	Incomplete Middle School	16	6,18%	11	3,79%
	Completed Middle School	14	5,41%	6	2,07%
	Incomplete High School	6	2,32%	11	3,79%
	Completed High School	88	33,98%	96	33,10%
	Incomplete College Education	56	21,62%	70	24,14%
	College degree	77	29,73%	87	30,00%

## 2.2 Data collection

Data was obtained from patient's reports collected during in-person or remote interviews on the first-time individuals visited the SAP at PUC-Rio seeking psychological help. Interviews and filling out of report forms were conducted by undergraduate students in their senior year of the Psychology program at PUC-Rio. All reports were then approved by a supervisor. SPA's report forms were standardized and consisted of three main parts: demographic information, clarification of the demand, description of procedures, progress of therapeutic sessions, and a conclusion of the case. For the purposes of this study, only the

demographic and clarification of the demand sections were used. To guarantee the anonymity of patients, all identifying information was removed from demographic and textual data.

Reports were categorized according to the year and divided into two groups: before (2019) and during the pandemic period (2020 and 2021). Text excerpts were transcribed verbatim in Portuguese using a word processing software for later textual corpus analysis. All entries were double checked for accuracy. Certain symbols, such as dashes, quotation marks, and indents, were removed or substituted to allow for software analysis. The typical length of the text excerpts was 39,55 words ( $\pm$ SD = 32,17; Md = 29).

To avoid subjective bias, we opted to not exclude residual-text information (RI) from the sampled texts. As RI we considered words such as: arrive as, because, bring, clinic, complaint, demand, help, main, patient, search, regarding, SPA, seek, service, so, therapy, to, treatment, and view (See table S1 and S2). These words were frequently used to compose sentences such as: "The patient sought care at the SPA clinic regarding [...]"; "Arrived at the SPA bringing as the main complaint [...]"; "Patient sought the therapy service bringing as demand [...]"; "The patient was pursuing treatment in view of [...]"; and "The patient was searching for treatment because [...]". While results from the lexical analysis used in this study depict these words as relevant, due to their high frequency, they are also often used in other parts of the text excerpts. Nonetheless, they clearly do not explain patients' complaints or demands, and we decided to keep them in the analysis rather than removing them for transparency's sake. Only clusters with 0% of RI were analyzed in terms of number, clusters containing RI were analyzed only in terms of the nature of the demand.

### 2.3 Data analysis

All text excerpts were carefully read by two independent researchers to check for errors and inconsistencies prior to analysis. Next, a lexical analysis of text excerpts was performed using Iramuteq (v.0.7) and R (v.4.1.3; R Core Team, 2022) [24, 25, 26]. Descending Hierarchical Analysis (DHA) and Correspondence Factor Analysis (CFA) were conducted as previously described [24]. Briefly, DHA was carried out to categorize the words in the corpus into distinct groups based on their co-

occurrence and distribution patterns. The goal was to identify text clusters with specific meanings, relying on the similarity, association, and frequency of the words [26, 27]. Selected lexical sets were then ranked by respective chi-square values and frequency [28]. The inclusion of both words and categories in their respective clusters was based on the following criteria [24, 26, 27]: (i) a frequency greater than the mean of occurrences in the corpus, (ii) the word appears primarily in that class, with a frequency of 50% or more, and (iii) a chi-square value greater than 3.84 within the respective cluster, with significance level at  $p < 0.05$  when  $df = 1$  [24, 28]. The active forms selected for analysis were adjectives, adverbs, nouns, and verbs recognized by the Iramuteq dictionary as previously described [28, 29]. Next, based on the DHC analysis, CFA analyses were carried out allowing for the visualization of relationships between lexical groups and descriptive variables in a factorial plane [24]. Specifically, using the chi-squared ( $\chi^2$ ) correlation and frequency values of each word in the corpus this analysis illustrates the proximities, oppositions, and tendencies of text segments (TS) in Cartesian space [24, 26, 27, 29].

## 2.4 Ethical issues

Everyone who seeks treatment at the SAP of PUC-Rio is asked to sign an informed consent allowing the use of their data to be used for scientific purposes. Patient information was anonymized and stored in a password-encrypted database. This study was reviewed and approved by the National Committee on Research Ethics – CONEP (CAAE# 60447722.6.0000.5282).

## 3. RESULTS

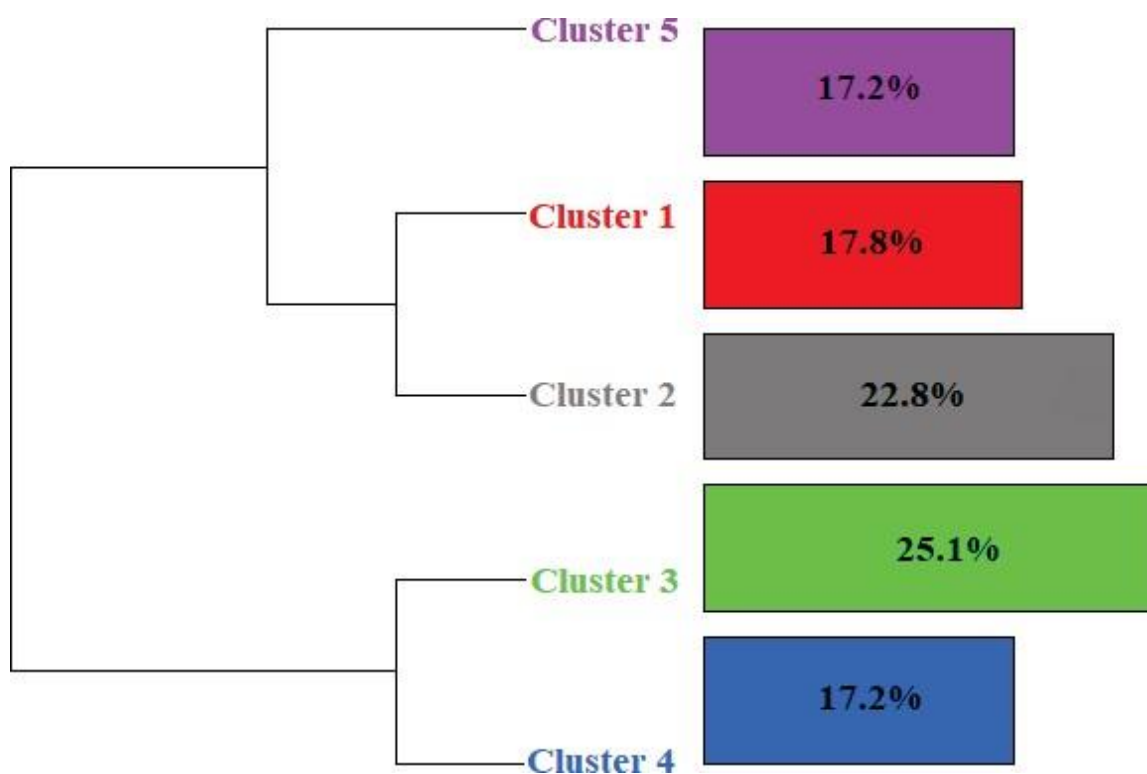
### 3.1 Descending Hierarchical Analysis (DHA)

#### *Pre-pandemic period*

The DHA analysis resulted in 98.08% of the entire corpus being kept, which is considered an acceptable proportion for this type of analysis [24, 25, 26]. The corpus was divided into 260 text segments (TS), with 255 (98.08%) being saved. They contained 1,843 words that appeared 9,489 times, with an average occurrence per TS of 36.49 and a standard deviation of 33.13, and a median of 25. Out of these, the

active forms accounted for 1,222 words, and 394 of these words had a frequency of more than three. Figure 1 illustrates the dendrogram of the DHA with 5 clusters for the pre-pandemic period. The analysis resulted in five clusters of words (Figure 1): cluster 1 (red, 17.6% of classified text), cluster 2 (gray, 22,8%), cluster 3 (green, 25,1%), cluster 4 (blue, 17,2%), and cluster 5 (purple, 17,2%).

**Figure 1.** Dendrogram of the DHA for the pre-pandemic period.



Cluster 1 (red) corresponds to self-esteem factors. Forms significantly associated with cluster 1 were: self-esteem ( $< 0.0001$ ), feeling ( $< 0.0001$ ), symptom ( $< 0.0001$ ), anxiety ( $< 0.0001$ ), coping ( $< 0.0001$ ), low ( $< 0.0001$ ), and self-confidence (0.00016). Self-esteem factors appear to be closely related to:

- (a) anxiety, “Work on anxiety disorder, paranoid health-related thoughts, lack of self-esteem, insecurity, self-validation, thoughts that the worst will always happen.”;
- (b) depression, “Frequent feeling of emptiness, in addition to issues related to low self-esteem associated with a feeling of inferiority compared to people in their social



cycle,” “Doesn't like to leave the house, can't go out alone and doesn't like to dress up because she doesn't feel pretty, she complains of low self-esteem. In view of all these related issues she no longer has the will to live.”; and (c) work life, “After being fired from a job she loved, in 2017, she went through a period of great discouragement, anxiety and negative thoughts about the future and herself. She spent about 2 years without doing the activities she liked, gained weight and until then had not been able to regain her self-esteem and her identity.”

Cluster 2 (gray) corresponds to mental health. The forms significantly with cluster 2 were: bring ( $< 0.0001$ ), complaint ( $< 0.0001$ ), service ( $< 0.0001$ ), condition ( $< 0.0001$ ), medicine (0.0002), SAP (0.0002), sadness (0.0006), depressive (0.0013), and anxiety (0.0109). Despite containing a lot of residual information (RI, see Material and Methods and **Table S1**), this cluster represents mostly disorders and medication related issues such as: (a) medication effectiveness, “[...] claimed that she felt that the medication was no longer controlling her anxiety.”; (b) dissatisfaction with medication, “[...] wants to stop taking antidepressant medication.”; (c) subjective relations to medication, “She arrives at the service under the guidance of her boyfriend, coming from psychiatric care. She highlights her anxiety, her relationship with alcohol, and her current use of medication.”; (d) identification of medication, “Reports having had moments of extreme sadness in which she spent days without leaving the house, brushing her teeth and taking a shower, even thinking about suicide. The patient currently uses Luvox (fluvoxamine) and is assisted by a psychiatrist.” In addition to medication and disorders issues, we can also find plural and isolated demands, such as strong feelings of sadness or anxiety, “The patient arrived at the SAP with anxiety as her main complaint, [...] bothered by a state of irritation that she considers excessive, explosive temper, and feelings of guilt.”

Cluster 3 (green) corresponds to family dynamics. Forms significantly associated with cluster 3 were: mother ( $< 0.0001$ ), housing ( $< 0.0001$ ), brother ( $< 0.0001$ ), death ( $< 0.0001$ ), good ( $< 0.0001$ ), grandson ( $< 0.0001$ ), mourning (0.0001), father (0.0003), violence (0.0004), child (0.0006), and family (0.0008). In this cluster it is possible to identify aspects related to the composition and degree of kinship of the members of the family group. Particularly, the relationships between them, their level of integration or dissociation, proximity or separation, relationship


problems, boundaries, and other family related interactions. Among these we can mention text excerpts such as “He currently lives with his mother, stepfather and brother, and has a good relationship with everyone. She never had contact with her father.”, “She has a family history of mental illness (father, mother and sister) and domestic violence, she was beaten by her father in adolescence.”, and “She is the eldest daughter coming from a family with limited financial resources. Her father and mother treat her like a sister, putting her as the family's caretaker.”

Cluster 4 (blue) corresponds to loneliness, tiredness and exhaustion. Forms significantly associated with cluster 4 were: very ( $< 0.0001$ ), tend ( $< 0.0001$ ), care ( $< 0.0001$ ), time ( $< 0.0001$ ), tired ( $< 0.0001$ ), forget ( $< 0.0001$ ), responsible ( $0.0001$ ), alone ( $0.0019$ ), and employment ( $0.0046$ ). This cluster seems to be associated with multifactorial demands: “She reports that she is very tired, she is responsible for her 3 children in addition to attending college.”, “[...] she was unable to do anything at work because she forgets things. According to her, she feels very tired and cannot stop at any job because she feels uncomfortable around other people.”, “[...] ended up pushing everyone away from her life and today she feels very alone, with no one to share anything with, and says she is responsible for that due to her arrogance.”, and “[...] reports that she invests practically all of her time in favor of her family and ends up not having time for herself.”

Cluster 5 (purple) corresponds to RI (see Material and Methods) and indicators of motivation to seek therapy. Forms significantly linked to cluster 5 were: seek ( $< 0.0001$ ), because ( $< 0.0001$ ), help ( $< 0.0001$ ), therapy ( $< 0.0001$ ), separation

( $< 0.0001$ ), history ( $< 0.0001$ ), drink ( $< 0.0001$ ), alcoholic ( $< 0.0001$ ), better ( $< 0.0001$ ), want ( $0.0001$ ), follow through ( $0.0001$ ), acquire ( $0.0001$ ), keep ( $0.0001$ ), understand ( $0.0001$ ), and help ( $0.0002$ ). In this cluster we have a set of multifactorial demands associated with RI, as noted in the following excerpt:

“sought psychotherapy as a means of trying to better understand her issue.

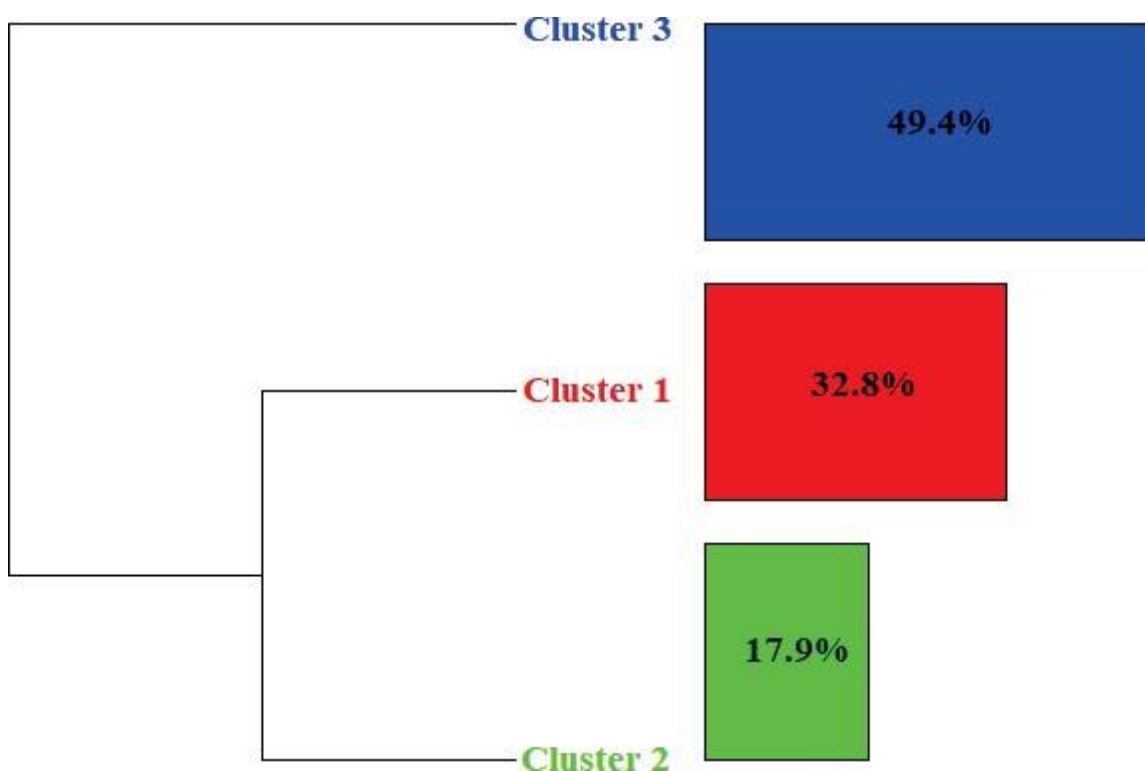
**Table 2.** Dendrogram for the pre-pandemic period with the 25 words with highest  $\chi^2$  in each cluster.


Word	Cluster 4 - 17.2%			Word	Cluster 3 - 25.1%			Word	Cluster 1 - 17.8%			Word	Cluster 2 - 22.8%			Word	Cluster 5 - 17.2%		
	$\chi^2$	$p$			$\chi^2$	$p$			$\chi^2$	$p$			$\chi^2$	$p$			$\chi^2$	$p$	
VER	34.61	<0,0001		MOTHER	50.23	<0,0001		SELF-ESTEEM	33.12	<0,0001		BRING	24.8	<0,0001		SEEK	53.38	<0,0001	
TEN	23.93	<0,0001		HOUSING	26.59	<0,0001		FEELING	29.48	<0,0001		COMPLAINT	22.42	<0,0001		BECAUSE	39.61	<0,0001	
CAR	23.63	<0,0001		BROTHER	24.35	<0,0001		SYMPTOM	23.63	<0,0001		SERVICE	19.42	<0,0001		HELP	29.47	<0,0001	
TIM	20.28	<0,0001		DEATH	23.32	<0,0001		ANXIETY	19.87	<0,0001		ARRIVE	17.7	<0,0001		THERAPY	25.5	<0,0001	
PER	19.9	<0,0001		GOOD	20.19	<0,0001		DEAL	19.15	<0,0001		PERSONAL	17.32	<0,0001		SEPARATION	24.46	<0,0001	
TIRE	19.49	<0,0001		GRANDSON	15.22	<0,0001		LOW	18.69	<0,0001		TO	16.63	<0,0001		ALCOHOLIC	19.49	<0,0001	
FOR	19.49	<0,0001		MOURNING	14.07	0,0001		SELF-CONFIDENCE	14.17	0,0001		AS	16.53	<0,0001		DRINK	19.49	<0,0001	
NOT	18.79	<0,0001		FATHER	12.73	0,0003		LACK	13.97	0,0001		MAIN	16.41	<0,0001		HISTORY	19.49	<0,0001	
SIT	15.44	<0,0001		DOMESTIC	12.13	0,0004		EMOTIONAL	10.77	0,0010		BOYFRIEND	16.24	<0,0001		GIVE	19.29	<0,0001	
VIEW	14.56	0,0003		PLACE	12.13	0,0004		CRISIS	10.67	0,0010		CONDITION	16.24	<0,0001		BETTER	15.95	<0,0001	
END	14.06	0,0001		GIRL	12.13	0,0004		TREATMENT	10.67	0,0010		DEMAND	14.43	0,0001		WANT	14.88	0,0001	
SO	14.06	0,0001		ORIGIN	12.13	0,0004		PHYSICAL	10.16	0,0014		PERIOD	13.8	0,0002		ACQUIRE	14.56	0,0001	
TODAY	14.06	0,0001		LITTLE	12.13	0,0004		TASK	10.16	0,0014		MEDICINE	13.8	0,0002		FOLLOW THROUGH	14.56	0,0001	
RESPONSIBLE	14.06	0,0001		VIOLENCE	12.13	0,0004		FACT	9.2	0,0024		SAP	13.49	0,0002		UNDERSTAND	14.06	0,0001	
THINK	11.2	0,0008		SON	11.75	0,0006		FORM	9.2	0,0024		SADNESS	11.73	0,0006		KEEP	14.06	0,0001	
THING	10.51	0,0011		ACTIVITY	11.57	0,0006		FRUSTRATION	9.2	0,0024		HIGHLIGHT	10.31	0,0013		HELP	13.32	0,0002	
ALONE	9.59	0,0019		FAMILY	11.22	0,0008		LOST	9.2	0,0024		DEPRESSIVE	10.24	0,0013		PSYCHOLOGICAL	13.04	0,0003	
NOT	8.65	0,0032		OLD	11.08	0,0008		NEVER	7.5	0,0061		SEARCH	10.18	0,0014		PROCESS	11.12	0,0008	
JOB	08.02	0,0046		INTENSE	10.94	0,0009		QUESTION	07.02	0,0072		CLINIC	9.74	0,0018		YEAR	9.89	0,0016	
RESPECT	08.02	0,0046		BEHIND	09.06	0,0026		DIFFICULTY	6.82	0,0090		GUIDANCE	9.74	0,0018		INDEPENDENCE	9.49	0,0020	
ACCOMPLISH	7.82	0,0051		BRAZIL	09.06	0,0026		BEFORE	6.29	0,0121		LIFE	8.54	0,0034		PSYCHOLOGIST	9.49	0,0020	
ALWAYS	7.82	0,0051		STEPFATHER	09.06	0,0026		DEPENDENCY	6.29	0,0121		PATIENT	7.11	0,0076		THEN	8.2	0,0046	
INVOLVE	6.53	0,0106		OCCUR	8.22	0,0041		CONFLICT	06.01	0,0142		MEET	6.75	0,0093		PANIC	08.02	0,0046	
THINK	6.53	0,0106		NEW	8.22	0,0041		DIAGNOSIS	5.95	0,0147		FUTURE	6.75	0,0093		ALREADY	7.86	0,0052	
FIGHT	5.19	0.0227		MOOD	8.18	0.0042		LOSS	5.95	0,0147		LONG	6.75	0,0093		ANXIOUS	6.8	0,0091	

*During the pandemic period*

The corpus was divided into 279 TS, of which 235 (84,23%) were retained. The number of words was 1,987 that occurred 10,212 times (mean of occurrence for TS = 36.60). In addition, 1,336 active words were identified, with 434 words with a frequency greater than three. The DHA analysis resulted in three clusters (**Figure 2**). The clustering resulted in only two branches, with cluster 1 (in red, representing 32.8% of the classified text) and cluster 2 (in green, 17.9%) in one branch, and cluster 3 (in blue, 49.4%) in the other.

**Figure 2.** Dendrogram of the DHA during the pandemic period.



Cluster 1 (red) corresponds to anxiety symptoms and panic attacks. The forms significantly associated with cluster 2 were: treatment ( $< 0.0001$ ), crisis ( $< 0.0001$ ), SAP ( $< 0.0001$ ), anxiety ( $< 0.0001$ ), coping ( $< 0.0001$ ), panic ( $< 0.0001$ ), depression (0.0005), and disorder (0.0075). In this cluster complaints seem mostly related to anxiety and panic

attacks: “The patient has complaints related to unwillingness to do your routine activities and frequent anxiety attacks”, “Sought care due to stressful relationships with family and history of panic attacks at work and at home”, “Patient seeks care due to severe anxiety attacks”, and “The patient reported having sought therapeutic care for having panic and anxiety attacks, complaining of difficulties in dealing with anxiety and symptoms of panic disorder.”

Cluster 2 (green) corresponds to grief and mental illness related to the COVID-19 pandemic. The forms significantly related to cluster 2 were: COVID-19 ( $< 0.0001$ ), suicide ( $< 0.0001$ ), fear ( $< 0.0001$ ), symptom ( $< 0.0001$ ), depressive ( $< 0.0001$ ), loss

(0.0002), loneliness (0.0002), death (0.0002), self-esteem (0.0003), social (0.0003), professional (0.0008), pandemic (0.0026) and stress (0.0026). As noted in the following excerpts: “[...] grief from close friends and psychosomatic symptoms of stress, anxiety and fear related to the COVID-19 pandemic [...] the patient described a lot of sadness after the death of his grandmother and sought care after a recommendation from a friend”, “Sought care for anxiety and depressive symptoms that he developed after having COVID-19 and losing his father in July”, “Patient brings grief issues and psychosomatic symptoms of stress, anxiety and fear related to the COVID-19 pandemic”, and “[...] recurring doubts about his academic and professional trajectory, social isolation, anxiety and grief.”

Cluster 3 (blue) corresponds to conflicts and communication between family members. Forms significantly associated with cluster 3 were: not ( $< 0.0001$ ), feel (0.0002), child (0.0006), college (0.0035), time (0.0035), need (0.0035), marriage (0.0065). As someone can see in these examples: “Constantly questions his place in family groups and among friends, does not consider himself as being an official member and feels like he can be removed if he end up bothering others [...] he feels the need to take care of others even if it brings harm to him and is not comfortable

taking care of himself”, “Her main complaint was that she really wanted to have a relationship with her son, but she couldn't because of her husband, who was very controlling.”, “Legal fight with ex-wife to obtain shared custody of daughter”, “Feels insecure and frustrated because he believes he is not being able to satisfy his current partner sexually”, “considers herself a very closed person who keeps all her feelings inside, she does not know how to say no to her family and says she feels overwhelmed all the time because of this.”

**Table 3.** Dendrogram for the during the pandemic period with the 25 words with highest  $\chi^2$  in each cluster.

Cluster 2 - 17.9%			Cluster 1 - 32.8%			Cluster 3 - 49.4%		
Word	$\chi^2$	<i>p</i>	Word	$\chi^2$	<i>p</i>	Word	$\chi^2$	<i>p</i>
BRING	73.57	<0,0001	TREATMENT	40.68	<0,0001	NOT	44.48	<0,0001
COVID-19	27.47	<0,0001	CRISIS	37.16	<0,0001	SIT	17.94	<0,0001
SUICIDE	18.7	<0,0001	SAP	32.51	<0,0001	FEEL	13.73	0,0002
FEAR	17.23	<0,0001	ANXIETY	27.69	<0,0001	STAY	13.53	0,0002
SYMPTOM	15.58	<0,0001	SEARCH	24.21	<0,0001	SON	11.69	0,0006
DEPRESSIVE	14.1	0,0001	DEAL	21.13	<0,0001	VERY	10.32	0,0013
ATTEMPT	13.96	0,0001	BECAUSE	17.71	<0,0001	COLLEGE	8.5	0,0035
DEMAND	13.52	0,0002	LACK	16.79	<0,0001	TIME	8.5	0,0035
DEATH	13.43	0,0002	PANIC	16.23	<0,0001	DAY	8.5	0,0035
ILLNESS	13.43	0,0002	FREQUENT	12.63	0,0003	NEED	8.5	0,0035
PSYCHICAL	13.43	0,0002	PATIENT	12.37	0,0004	MORE	8.36	0,0038
FEEL	13.43	0,0002	DEPRESSION	11.97	0,0005	TURN	7.97	0,0047
SOCIAL	12,63	0,0003	SEEK	10.82	0,0010	MARRIAGE	7.4	0,0065
SELF-ESTEEM	11.24	0,0008	HISTORY	10.58	0,0014	TELL	7.24	0,0071
PROFESSIONAL	9.99	0,0015	BETTER	8.61	0,0033	RIGHT	6.32	0,0119
ACADEMIC	9.99	0,0015	PREVENT	8.35	0,0038	INSECURE	6.32	0,0119
INSTANTLY	9.07	0,0026	BOYFRIEND	8.35	0,0038	HAVE	6.32	0,0119
ACADEMIC	9.05	0,0026	DISSATISFACTION	8.35	0,0075	WHEN	5.85	0,0155
RELATION	9.05	0,0026	EPISODE	7.15	0,0075	BEFORE	5.85	0,0155
REGARDING	9.05	0,0026	SYNDROME	7.15	0,0075	ACCEPT	5.24	0,0220
SPEAK	9.05	0,0026	AREA	7.15	0,0075	CONSIDER	5.24	0,0220
STRESS	9.05	0,0026	DISORDER	7.15	0,0075	DEPRESSED	5.24	0,0220
LOVING	8.89	0,0028	INITIATE	6.24	0,0125	DISTURB	5.24	0,0220
LOW	7.58	0,0059	ROUTINE	6.24	0,0125	FINISH	5.24	0,0220
CAUSE	5.82	0,0158	PURSUIT	5.93	0,0149	CARE	5.24	0,0220

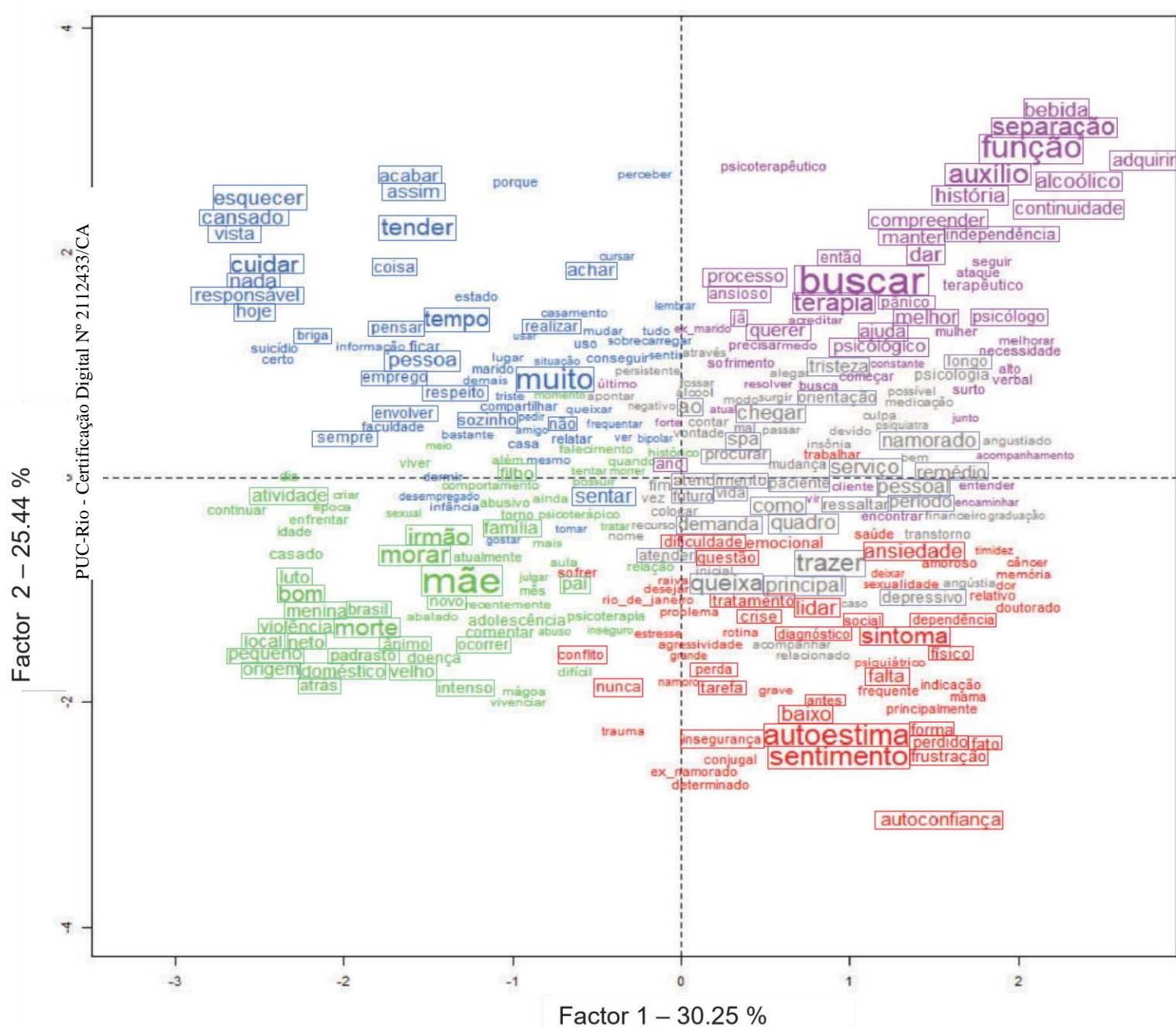
### 3.2 Correspondence factor analysis (CFA)

#### *Pre-pandemic period*

CFA was carried out to visualize the relationship between clusters [24, 26, 27]. While five clusters were identified, the boundaries between them overlap (**Figure 3**). As mentioned above, words in red belong to Cluster 1 that relates to self-esteem factors, words in gray belong to Cluster 2 that relates to mental health, words in green belong to Cluster 3 that relates to family dynamics, words in blue belong to Cluster 4 that relates to loneliness, tiredness and exhaustion, and words in purple belong to Cluster 5 that relates to RI (see Material and Methods and **Table S1**) and indicators of motivation to seek therapy. Highlighted words by solid rectangles represent the 25 words with highest  $\chi^2$  in each cluster for text excerpts collected during the pre-pandemic period (**Table 2**). The two factors explain 30.58% (X axis) and 25.57% (Y axis) of the model, respectively (**Figure 3**).

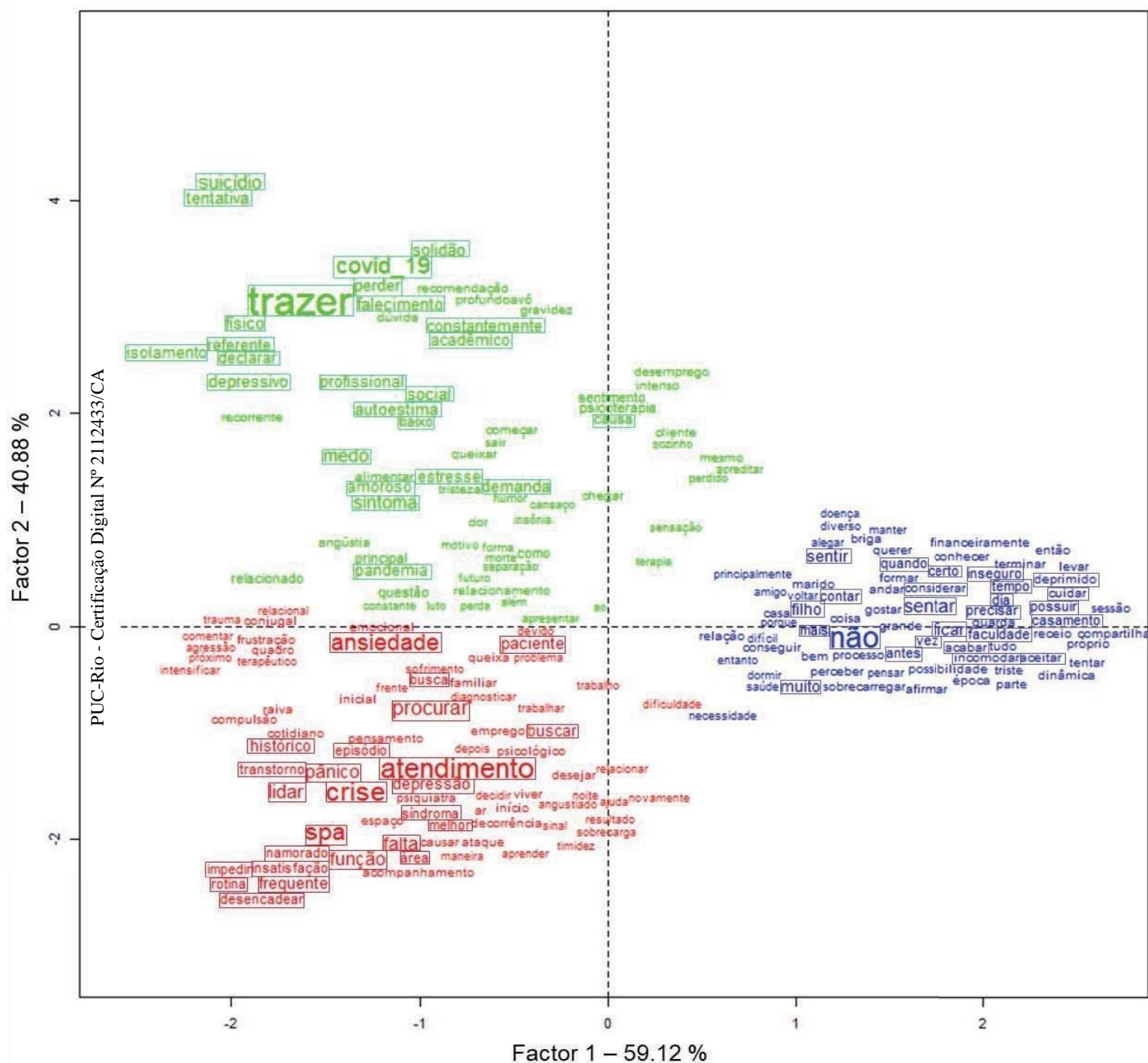


**Figure 3.** Correspondence factorial analysis (CFA) of the pre-pandemic period. Words in red belong to Cluster 1 that relates to self-esteem factors, words in gray belong to Cluster 2 that relates to mental health, words in green belong to Cluster 3 that relates to family dynamics, words in blue belong to Cluster 4 that relates to loneliness, tiredness and exhaustion, and words in purple belong to Cluster 5 that relates to RI and indicators of motivation to seek therapy. Highlighted words by solid rectangles represent the 25 words with highest  $\chi^2$  in each cluster for text excerpts collected during the pre-pandemic period.



*During-pandemic period*

Contrary to the pre-pandemic period, identified clusters are well-defined showing clear boundaries (**Figure 4**). As cited above words in red belong to Cluster 1 that relates to anxiety symptoms and panic attacks, words in green belong to Cluster 2 that relates to grief and mental illness related to the COVID-19 pandemic, and words in blue belong to Cluster 3 that relates to conflicts in family and relationships. Highlighted words by solid rectangles represent the 25 words with highest  $\chi^2$  in each cluster for text excerpts collected during the pandemic period (**Table 3**). In this group, the two factors explain 58.39% (X axis) and 41.61% (Y axis) of the model, respectively which is represented on the X and Y axes in (**Figure 4**).



### *Summary of results*

At the pre-pandemic moment, we can highlight the strong proximity between clusters 1 (self-esteem) and 2 (mental health), as demonstrated by the CFA (**Figure 3**). The association between both suggests the implication of self-esteem factors on mental health disorders. Likewise, clusters 3 and 4 are also closely related (**Figure 3**) and imply insights into conflicts and communication between family members and its correlation with the feeling of loneliness, tiredness, and exhaustion in this population even before the pandemic. Based on these analyses, we can begin to identify a few changes in the main demand and redirection of complaints of patients during the period of COVID-19.

## **4. DISCUSSION**

This is a mixed methods study in the sense that made use of a quanti-qualitative analysis to identify and compare the main complains and demands from individuals seeking psychological help before the onset (2019) and during the COVID-19 pandemic (2020 and 2021), with particular interest in those living in low-income communities. By now, the impact of the pandemic on mental health is evidently clear, as evidenced by the more than 35,000 papers published on this topic [4]. However, most of studies do not provide a complete picture of such effect due, for instance, pre-COVID-19 data [4]. Therefore, despite its inherent limitations, the study of relevant mental health data from patient records using the current approach is a straightforward and low-cost way to investigate clinical changes over time. Moreover, like observed in the present study, patient report- forms have valuable demographic information, which, for instance, allows carrying analyses based on secondary speech that guarantees methodological support and reliability [30]. Of course, for this to be possible it is worth reminding that all ethical requirements for conducting such studies are met, including ethical research requirements of institutions. To begin with, the fact that most of the demands are made by women, both before and during the pandemic, may indicate a stigma behind men from lower social classes seeking psychological support. Interestingly, according to our data, the pandemic seems to have had no influence on this scenario. The frequency of demands from both sexes remained similar for both periods before and during

the pandemic (**Table 1**). In fact, previous studies indicate that in Brazil the stigma associated with mental illness is still a sad reality [31] and, as one could expect, manifests itself more sharply in more vulnerable and low-income communities [32], a pattern that is also observed in other developing countries [33]. Yet, one silver lining amid all the pain, hardship, and suffering brought by the COVID-19 pandemic, might be an increased awareness and understanding of mental health issues. In fact, Brazil is taking important steps to expand access to mental health treatment and reduce the stigma on mental health, particularly among the less privileged [20, 21]. In fact, Brazil is taking important steps to expand access to mental health treatment and reduce the stigma surrounding it, particularly among the less privileged [20, 21]. In this regard, it is worth mentioning the pioneering work of the SAP at PUC-Rio, which has been providing psychological assistance to those in need since 1957 [23].

Our study shows a clear change in the pattern and specificity of psychological issues and demands during the pandemic period, revealed either by the number or by nature of complaints. For instance, note that clusters associated with family dynamics (cluster 3 on both periods) not only remained, but also increased by 24% during the pandemic. In both periods, complaints of this nature proved to be the main reason for seeking psychological treatment at SAP. It is important to identify long-lasting consequences from changes in family dynamics and perceptions once it might disrupt the bond, connection, affection and quality of the family relationship.

Furthermore, the identification of a specific cluster for symptoms of anxiety and panic attacks during the pandemic period raises concerns about the worsening of problems related to mental health. Fear of contamination itself in addition to forced quarantine and lockdowns can produce acute panic and anxiety in the long run [34]. Considering the fright and uncertainty faced by the general population, it was expected the rise and/or magnification of anxiety and panic disorder symptoms. That is, experiencing or watching others experience COVID-19 infection can be a trigger and might be related to anxiety symptoms or panic attacks, especially when the symptoms are so similar.

In addition, our study highlighted one cluster specific for grief and mental illness related to the COVID-19 pandemic. The losses and grief felt during this period of

crisis constitute risk factors for the development of psychological disorders, even to a greater degree when these feelings are not properly supported. Loss and grief identification and management among patients, family members, and healthcare professionals are critically important during the COVID-19 pandemic [35]. Studies indicate that current operating guidelines have proven insufficient in managing loss and grief, calling attention to the need for new strategies to tackle the many dimensions of such feelings [35].

With regard to the CFA analyses, we can observe that in the period before the pandemic, complaints of different clusters are mainly overlapping, especially between cluster 1 (self-esteem) and 2 (mental health and medication). This may indicate a correlation between factors related to low self-esteem and the development of psychological disorders. Likewise, clusters 3 and 4 are also closely related (Fig. 3) and imply insights into family dynamics and its correlation with the feeling of loneliness, tiredness, and exhaustion in this population even before the pandemic and quarantine measures.

In contrast, during the pandemic, the CFA analysis showed better-defined and less overlapping clusters in addition to a smaller number of them. When the patient brings only one complaint, it does not necessarily mean a better situation than the patient who brings plural complaints, but this may indicate a better-defined perception of the main complaint. If before the pandemic patients reported a plurality of complaints, during the pandemic there was a greater focus on a given subject. This can designate a perception of prominence or aggravation of a specific problem, such as (1) anxiety symptoms and panic attacks, (2) grief and mental illness related to the COVID-19 pandemic, and / or (3) conflicts and communication between family members.



## 5. CONCLUSION

In conclusion, the COVID-19 pandemic has had a devastating impact on low-income communities, exacerbating existing symptoms, social-economic inequalities, and making it more difficult for these communities to access adequate healthcare and support services. To address these challenges, it is crucial that governments and organizations provide targeted support to mitigate the profound and long-lasting effects of the pandemic on mental health. Moreover, it is important to raise awareness about the subjective ways in which the pandemic affected emotionally, and to destigmatize seeking help. Although extremely necessary for the time, restrictive measures such as social isolation, quarantine and lock down had major effects on mental health.

The study has an important limitation, regarding the prior elaboration of the reports. As a specific interview was not carried out with the patients, a considerable amount of residual information from textual construction and contextualization interfered with the results. Nevertheless, this study offers a first finding about possible complaint transitions due to the pandemic. The results shed light on the individual and situational factors that may contribute to negative mental health outcomes following the pandemic. Long-term health problems may arise over the years and following up on the evolution of demands in health care institutions is an important indicator of what we should be aware of when dealing with economically vulnerable populations. Experts already predict that mental health consequences of the COVID-19 crisis are likely to be present for a longer period of time and may also peak later than the current pandemic [36]. In that way, understanding the development of psychological symptoms in a vulnerable population has become paramount after the COVID-19 pandemic. These results can be useful for better understanding the effects of the COVID-19 pandemic on mental health beyond tracking its long-lasting consequences. In addition to that, we hope to help professionals and care services in the management of these issues, apart from shedding light on risk factors for the development of psychological disorders.

**SUPPLEMENTARY MATERIAL**



Table S1. Translation and classification of words with the 25 words with highest  $\chi^2$  in each cluster of the pre-pandemic group.

W	Cluster 4 - 17.2%		Cluster 3 - 25.1%			Cluster 1 - 17.8%			Cluster 2 - 22.8%			Cluster 5 - 17.2%		
	WP	WC	WE	WP	WC	WE	WP	WC	WE	WP	WC	WE	WP	WC
VERY	MUITO	MW	MOTHER	MÃE	MW	SELF-ESTEEM	AUTOESTIMA	MW	BRING	TRAZER	RI	SEEK	BUSCAR	RI
TEND	TENDER	MW	HOUSING	MORAR	MW	FEELING	SENTIMENTO	MW	COMPLAINT	QUEIXA	RI	BECAUSE	FUNÇÃO	RI
CARE	CUIDAR	MW	BROTHER	IRMÃO	MW	SYMPTOM	SINTOMA	MW	SERVICE	SERVIÇO	RI	HELP	AUXÍLIO	RI
TIME	TEMPO	MW	DEATH	MORTE	MW	ANXIETY	ANSIEDADE	MW	ARRIVE	CHEGAR	RI	THERAPY	TERAPIA	RI
PERSON	PESSOA	MW	GOOD	BOM	MW	DEAL	LIDAR	MW	PERSONAL	PESSOAL	MW	SEPARATION	SEPARAÇÃO	MW
TIRED	CANSADO	MW	GRANDSON	NETO	MW	LOW	BAIXO	MW	TO	AO	RI	ALCOHOLIC	ALCOÓLICO	MW
FORGOT	ESQUECER	MW	MOURNING	LUTO	MW	SELF-CONFIDENCE	AUTOCONFIANÇA	MW	AS	COMO	RI	DRINK	BEBIDA	MW
NOTHING	NADA	MW	FATHER	PAI	MW	LACK	FALTA	MW	MAIN	PRINCIPAL	RI	HISTORY	HISTÓRIA	MW
SIT	SENTAR	MW	DOMESTIC	DOMÉSTICO	MW	EMOTIONAL	EMOCIONAL	MW	BOYFRIEND	NAMORADO	MW	GIVE	DAR	MW
VIEW	VISTA	RI	PLACE	LOCAL	MW	CRISIS	CRISE	MW	CONDITION	QUADRO	MW	BETTER	MELHOR	MW
END	ACABAR	MW	GIRL	MENINA	MW	TREATMENT	TRATAMENTO	MW	DEMAND	DEMANDA	RI	WANT	QUERER	MW
SO	ASSIM	RI	ORIGIN	ORIGEM	MW	PHYSICAL	FÍSICO	MW	PERIOD	PERÍODO	MW	ACQUIRE	ADQUIRIR	MW
TODAY	HOJE	MW	LITTLE	PEQUENO	MW	TASK	TAREFA	MW	MEDICINE	REMÉDIO	MW	FOLLOW THROUGH	CONTINUIDADE	MW
RESPONSIBLE	RESPONSÁVEL	MW	VIOLENCE	VIOLENCIA	MW	FACT	FATO	MW	SAP	SPA	RI	UNDERSTAND	COMPREENDER	MW
THINK	ACHAR	MW	SON	FILHO	MW	FORM	FORMA	MW	SADNESS	TRISTEZA	MW	KEEP	MANTER	MW
THING	COISA	MW	ACTIVITY	ATIVIDADE	MW	FRUSTRATION	FRUSTRAÇÃO	MW	HIGHLIGHT	RESSALTAR	MW	HELP	AJUDA	MW
ALONE	SOZINHO	MW	FAMILY	FAMÍLIA	MW	LOST	PERDIDO	MW	DEPRESSIVE	DEPRESSIVO	MW	PSYCHOLOGICAL	PSICOLÓGICO	MW
NOT	NÃO	MW	OLD	VELHO	MW	NEVER	NUNCA	MW	SEARCH	PROCURAR	RI	PROCESS	PROCESSO	MW
JOB	EMPREGO	MW	INTENSE	INTENSO	MW	QUESTION	QUESTÃO	MW	CLINIC	ATENDIMENTO	RI	YEAR	ANO	MW
RESPECT	RESPEITO	MW	BEHIND	ATRÁS	MW	DIFFICULTY	DIFICULDADE	MW	GUIDANCE	ORIENTAÇÃO	MW	INDEPENDENCE	INDEPENDÊNCIA	MW
ACCOMPLISH	REALIZAR	MW	BRAZIL	BRASIL	MW	BEFORE	ANTES	MW	LIFE	VIDA	MW	PSYCHOLOGIST	PSICÓLOGO	MW
ALWAYS	SEMPRE	MW	STEPFATHER	PADRASTO	MW	DEPENDENCY	DEPENDENCIA	MW	PATIENT	PACIENTE	RI	THEN	ENTÃO	MW
INVOLVE	ENVOLVER	MW	OCCUR	OCORRER	MW	CONFLICT	CONFLITO	MW	MEET	ATENDER	MW	PANIC	PÂNICO	MW
THINK	PENSAR	MW	NEW	NOVO	MW	DIAGNOSIS	DIAGNÓSTICO	MW	FUTURE	FUTURO	MW	ALREADY	JÁ	MW
FIGHT	BRIGA	MW	MOOD	ÂNIMO	MW	LOSS	PERDA	MW	LONG	LONGO	MW	ANXIOUS	ANSIOSO	MW
RI = 8%			RI = 0%			RI = 0%			RI = 48%			RI = 16%		

WE, word in English; WP, word in Portuguese; MW, meaningful word; WC, word classification; %RI = frequency of RIs within the 25 words with highest  $\chi^2$

**Table S2. Translation and classification of words with the 25 words with highest  $\chi^2$  in each cluster of the during-pandemic group.**

Cluster 2 - 17.9%			Cluster 1 - 32.8%			Cluster 3 - 49.4%		
WE	WP	C	WE	WP	C	WE	WP	C
BRING	TRAZER	RI	TREATMENT	ATENDIMENTO	RI	NOT	NÃO	MW
COVID-19	COVID-19	MW	CRISIS	CRISE	MW	SIT	SENTAR	MW
SUICIDE	SUICÍDIO	MW	SAP	SPA	RI	FEEL	SENTIR	MW
FEAR	MEDO	MW	ANXIETY	ANSIEDADE	MW	STAY	FICAR FILHO	MW
SYMPTOM	SINTOMA	MW	SEARCH	PROCURAR	RI	SON	MUITO	MW
DEPRESSIVE	DEPRESSIVO	MW	DEAL	LIDAR	MW	VERY	FACULDADE	MW
ATTEMPT	TENTATIVA	MW	BECAUSE	FUNÇÃO	RI	COLLEGE	TEMPO	MW
DEMAND	DEMANDA	RI	LACK	FALTA	MW	TIME	DIA	MW
DEATH	FALECIMENTO	MW	PANIC	PÂNICO	MW	DAY	PRECISAR	MW
LONELINESS	SOLIDÃO	MW	FREQUENT	FREQUENTE	MW	NEED	MAIS	MW
PHYSICAL	FÍSICO	MW	PATIENT	PACIENTE	RI	MORE	VEZ	MW
LOSE	PERDER	MW	DEPRESSION	DEPRESSÃO	MW	TURN	CASAMENTO	MW
SOCIAL	SOCIAL	MW	SEEK	BUSCAR	RI	MARRIAGE	CONTAR	MW
SELF-ESTEEM	AUTOESTIMA	MW	HISTORY	HISTÓRICO	MW	TELL	CERTO	MW
PROFESSIONAL	PROFISSIONAL	MW	BETTER	MELHOR	MW	RIGHT	INSEGURO	MW
ACADEMICALLY	ACADÊMICO	MW	PREVENT	IMPEDIR	MW	INSECURE	POSSUIR	MW
CONSTANTLY	CONSTANTEMENTE	MW	BOYFRIEND	NAMORADO	MW	HAVE	QUANDO	MW
PANDEMIC	PANDEMIA	MW	DISSATISFACTION	INSATISFAÇÃO	MW	WHEN	ANTES	MW
ISOLATING	ISOLAMENTO	MW	EPISODE	EPISÓDIO	MW	BEFORE	ACEITAR	MW
REGARDING	REFERENTE	RI	SYNDROME	SÍNDROMA	MW	ACCEPT	CONSIDERAR	MW
SPEAK	DECLARAR	MW	AREA	ÁREA	MW	CONSIDER	DEPRIMIDO	MW
STRESS	ESTRESSE	MW	DISORDER	TRANSTORNO	MW	DEPRESSED	INCOMODAR	MW
LOW	BAIXO	MW	INITIATE	DESENCADear	MW	DISTURB	ACABAR	MW
LOVING	AMOROSO	MW	ROUTINE	ROTINA	MW	FINISH	CUIDAR	MW
CAUSE	CAUSA	MW	PURSUIT	BUSCA	RI	CARE		MW
RI = 12%			RI = 28%			RI = 0%		

WE, word in English; WP, word in Portuguese; MW, meaningful word; WC, word classification; %RI = frequency of RIs within the 25 words with highest  $\chi^2$

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## ARTICLE 2

### **Impact of the COVID-19 pandemic on the Mental Health of Families.**

Manuscript will be submitted to the Journal of Health Psychology once we receive feedback from all contributing authors.

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## ABSTRACT

Many Brazilian families already deal on a daily basis with situations that impact mental health, including poverty, inequality, and lack of access to quality mental health care. The COVID-19 pandemic has worsened these challenges and put tremendous stress on families' mental health, leading to increased stress and anxiety, financial pressure, parenting challenges, strained relationships, and disruptions of mental health treatment. As the pandemic continues to evolve, families are likely to face new and persistent mental health demands, such as post-traumatic stress, difficulty adapting to normal activities, ongoing financial strain, higher occurrence of mental health problems and interruptions in mental health treatment. Tracking the complaints of family members over the years may help to understand the consequences of the pandemic and the degree of damage associated. The purpose of our study was to examine and identify the primary factors linked to the reasons why families sought psychological assistance before and during the COVID-19 pandemic. A total of 241 reports were analyzed with the assistance of the IRaMuTeQ textual analysis software. Our findings revealed a shift in the psychological needs during the pandemic, as seen in either the increase or change in mental health complaints raised. The key results showed difficulties in family communication, which seem to have persisted during COVID-19 and developed into housing and cohabitation issues. Aggressive behavior in young individuals was revealed to be a persistent problem as well as the connection between anxiety, mental health issues, and challenges in housing and family dynamics. The impact of the COVID-19 pandemic on the mental health of Brazilian families has been substantial, making it vital to attend to their needs and assist them in maintaining and enhancing their mental well-being even after the pandemic has subsided.

**Keywords:** Coronavirus; SARS-CoV-2; mental health; IRaMuTeQ; therapy; complaint, family, family dynamic.



## INTRODUCTION

Since the Coronavirus (COVID-19) pandemic was announced, we had an unprecedented change in the way we organize ourselves socially and in our daily routine (de Figueiredo et al., 2021; Luttik et al, 2020). The restrictive measures implemented by various government leaders around the world, although essential for the moment, put at risk the well-being of families, children in particular, due to challenges related to social disruption such as financial insecurity, caregiving burden, and confinement-related stress (Prime, Wade & Browne, 2020; Luttik et al, 2020).

When it comes to the impact of COVID-19 on families, we cannot forget that children and adolescents were greatly impacted by the abrupt withdrawal from school, social life and outdoor activities (de Figueiredo et al., 2021). Although youngsters appear to be less vulnerable to COVID-19, the side effects of the pandemic can be devastating (de Figueiredo et al., 2021). Due to the closure of schools and the absence of outdoor activities, children and adolescents were kept at home with their parents and families (de Figueiredo et al., 2021). As a result, they ended up spending more time with their family members and increasing time spent with social media and the internet (de Figueiredo et al., 2021; Guessoum et al., 2020; Keles et al., 2020). Although spending time with family can be seen as a positive experience, this situation can raise some concerns when it comes to dysfunctional family dynamics, parents with psychiatric diagnosis, and even abuse or domestic violence (Crescentini et al., 2020). In addition to that, being constantly exposed for over a year to a family member that was also under extra stressful conditions can cause not only a greater impact on mental health, but also disrupt the family dynamics, bonds and relationships (Crescentini et al., 2020).

The stress that families are subjected to directly affects their mental health on account of increased anxiety for example. Yet vulnerable populations tend to cope daily with distress and have been affected by the pandemic more than others (Lewis, Martin & Guzman, 2022; Luttik et al, 2020). It is undeniable that these populations faced different conditions and challenges during the peak of the pandemic. The difficulty in accessing health services, information, safe open and empty areas for exercise, impracticability of working from home or isolation – due to lack of

privacy and oversharing rooms – and infeasibility of continuing studies via online access, are just a few barriers that economically vulnerable populations faced during COVID-19. The reorganization of health services and the social distancing measures implemented, in addition to people's fear of being infected and the lack of information, have led to a series of consequences for both patients and their families (Zullo et al, 2021). This can be an even bigger problem when considering developing countries such as Brazil.

Thus, understanding the impact of the COVID-19 pandemic on the mental health of low-income families is crucial for grasping the associated consequences of this global health crisis. To explore this topic, we utilized a combination of quantitative and qualitative methods to examine and compare the motivations behind this vulnerable population that sought psychological assistance before and during the pandemic. Specifically, we perform the text analysis of families' reports from the Service of Applied Psychology (SAP) of a private university, one year before the beginning of the COVID-19 pandemic (2019), and on the following two years after it started (2020 and 2021). By doing so, we hope to contribute to existing literature and provide more informed guidance to healthcare services regarding their practices, planning, risk factors, and likelihood of cases.

## **METHODS**

### **Sample**

A total of 241 reports were collected from children, adolescents, families and couples between March 2020 and December 2021. The sample was extracted directly at the SAP by the researcher. See table 1 for the distribution of the sample of children and adolescents in individual therapy according to gender, age and education.

**Table 1. Demographic data of the sample of children and adolescents in individual psychotherapy before and during the pandemic. The mean age of the participants was 11.17 (SD = 3.5) with an age range of 3–17 years.**

		BEFORE		DURING	
		N	%	N	%
Sex	Men	33	54%	50	59%
	Women	28	46%	35	41%
	Total	61	42%	85	58%
Age					
	3 - 6	7	11,48%	4	4,71%
	7 - 12	35	57,38%	50	58,82%
	13 or more	19	31,15%	31	36,47%
Education					
	Missing data	1	1,64%	0	0,00%
	Elementary School	1	1,64%	3	3,53%
	Middle School	49	80,33%	69	81,18%
	High School	10	16,39%	13	15,29%

In turn, **table 2** shows the distribution of the sample of adults between groups and modalities. All the patients in the study came from average, below-average, and low socioeconomic groups within the population of Rio de Janeiro, Brazil.

**Table 2. Demographic data of the sample of patients who sought family or couple therapy before and during the pandemic.**

		BEFORE		DURING	
		N	%	N	%
Couples		4	5,33%	18	24,00%
Family		20	26,67%	33	44,00%

## **Extraction of data and construction of textual corpus**

The data obtained are from patients who were seeking psychological assistance and underwent an initial interview at PUC-Rio's SAP in the years 2019, 2020 and / or 2021. Patient's reports were collected by undergraduate students, with the approval of a supervisor, which therefore filled out the reports forms that compose the textual data. The data was manually digitized and transferred into a unified document for analysis, and any grammar or typing errors were corrected. Additionally, certain symbols were removed or substituted (such as hyphens, quotation marks, and indentations) to facilitate analysis by the software.

The reports must adhere to a standard format and include a comprehensive case presentation that covers the identification section, a clear explanation of the demand, a detailed account of the procedures, a progress report of the sessions, and a conclusion of the case. For the purposes of this article, only two sections were analyzed: the identification and explanation of the demand. In this research, identification information was treated confidentially to ensure patient anonymity and confidentiality.

## **Data analysis**

All reports were read in detail by two members of the research team. Subsequently, the texts (n=241) were analyzed through IRaMuTeQ 0.7 alpha 2 (Ratinaud & Marchand, 2012) and R 4.1.3. (R Core Team, 2022). The analysis was carried out through the textual corpus constructed from the reports using the demand section as the text segments (TS). The average length of the reports was 53.44 words.

Descending Hierarchical Analysis (DHA, Reinert Method) and Specificities Analysis were carried out in order to classify textual content clusters with specific meanings, resulting from the similarity, association, frequency and co-occurrence in between vocabularies. These two procedures, when combined, allow the classification and visualization of the co-occurrence between words and the possible commonalities in which they coalesce.

The inclusion criteria for both words and categories in their respective clusters by DHA aligns with previous research and considers a occurrence frequency higher

than the average in the corpus, a chi-square value greater than 3.84, and the word appearing primarily in that class with a frequency of at least 50%. The words of interest selected for analysis, in active form, were adjectives, nouns, and verbs that were recognized by the IRaMuTeQ dictionary.

### **Ethical issues**

All individuals who seek treatment at the SAP of PUC-Rio are required to sign an informed consent form, granting permission for their data to be used for scientific purposes. The patient information was anonymized and securely kept in a database encrypted with a password. This study received approval from the National Committee on Research Ethics – CONEP (CAAE# 60447722.6.0000.5282).

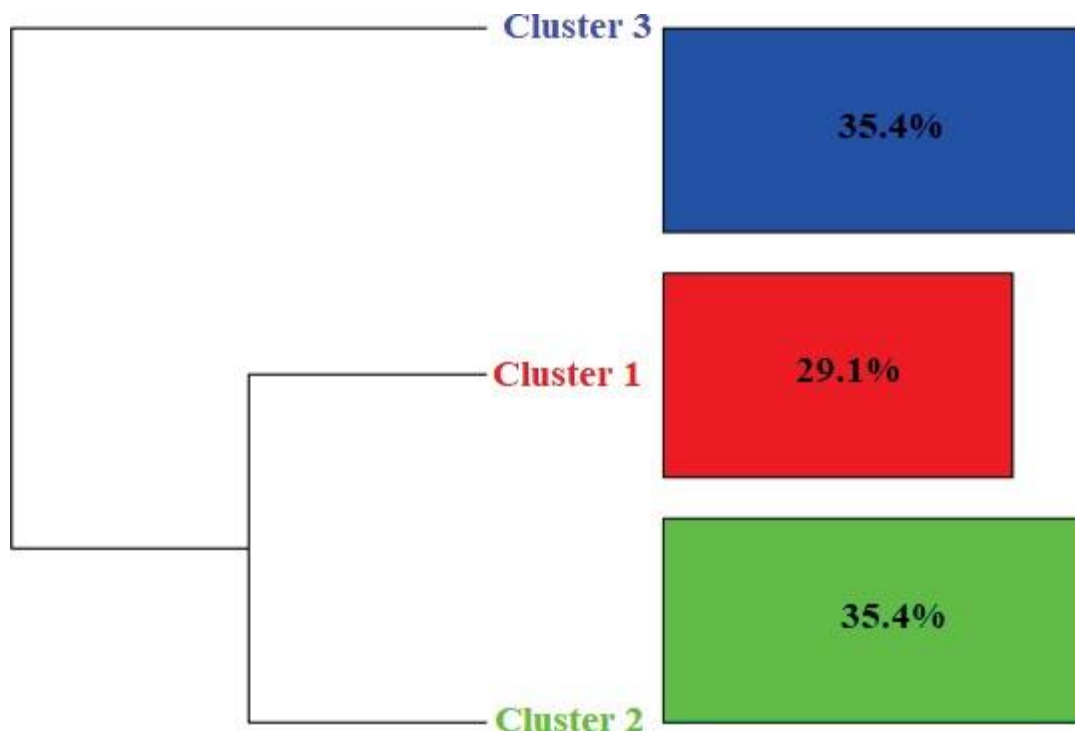
## **RESULTS**

### **Descending hierarchical analysis (DHA)**

#### *Pre-pandemic period*

The DHA analysis retained 81.44% of the total corpus, which is considered an acceptable percentage for this type of analysis. The corpus was automatically divided into 97 TS having 1100 words that occurred 3587 times (mean of forms per TS = 36.97). Of these, the active forms formed 776 words, with 180 words with frequency greater than three. As depicted in **figure 1**, the DHA dendrogram using the Reinart method resulted in three clusters of words. These clusters are grouped into two separate branches, with cluster 1 (29.1% of total forms) and cluster 2 (35.4%) joining in one branch and cluster 3 (35.4%) in the other.

**Figure 1. Dendrogram of DHA using the Reinart method from pre-pandemic period.**




Cluster 1 corresponds to multifactorial worries and struggles. Forms that are significantly associated and better illustrate this cluster are: “also” (0.0005), “worried” (0.0013), “time” (0.0013), “life” (0.0023), “home” (0.0025), and “fear” (0.0058). TS that mostly relate to this cluster are: “The mother was very worried about her daughter and also insecure about how to exercise her maternity, revealing that she had great difficulty dedicating time to herself.”, “The mother was very concerned about the safety of both her daughters and herself.”, “She already thought about sleeping forever but gave up because it would make her parents sad.”, “Parents live in another state and they were concerned about the teenager's poor school performance.”.

Cluster 2 raises aspects related to emotion and aggressive behavior. Forms that are significantly associated and better illustrate this cluster are: “school” (<0.001), “issue” (0.0005), “psychological” (0.0011), “agitation” (0.0018), “aggressiveness”

(0.0018), “difficulty” (0.0028), “problem” (0.0053), and “bullying” (0.0056). Most of the complaints point out aggression, agitation and anxiety: “[...] complaint of aggression, agitation and anxiety [...]”, “seeks care for the boy because of aggressiveness, agitation and difficulty at school”, “aggressiveness especially when going to school”, “anxiety, hyperactivity, and excessive crying”, “does not have pedagogical difficulties, but usually scores 0 in behavior”, “seeking psychological support due to aggressiveness at school, low school performance, self-mutilation and anxiety”.

Cluster 3 corresponds to family conflict and communication. Forms that are significantly associated and better illustrate this cluster are: “psychotherapy” ( $<0.0001$ ), “brother” (0.0011), “family” (0.0016), “environment” (0.0018), “couple” (0.0018), “conflict” (0.0018), “children” (0.0052) and “communication” (0.0107). Examples of TS that better corresponds to this clusters are: “[...] complain about the lack of communication between them”, The couple claims to have sought psychotherapy because they are facing communication problems, unable to dialogue”, “[...] extreme distress on the boy's part in dealing with the constant fighting between all family members”, “The couple is emotionally distanced and they also have communication difficulties.”, “[...] also showed some relational conflicts complaining of not being able to understand each other”.

**Table 3. Dendrogram showcasing the top 10 words with the highest  $\chi^2$  in each cluster during the pre-pandemic period.**



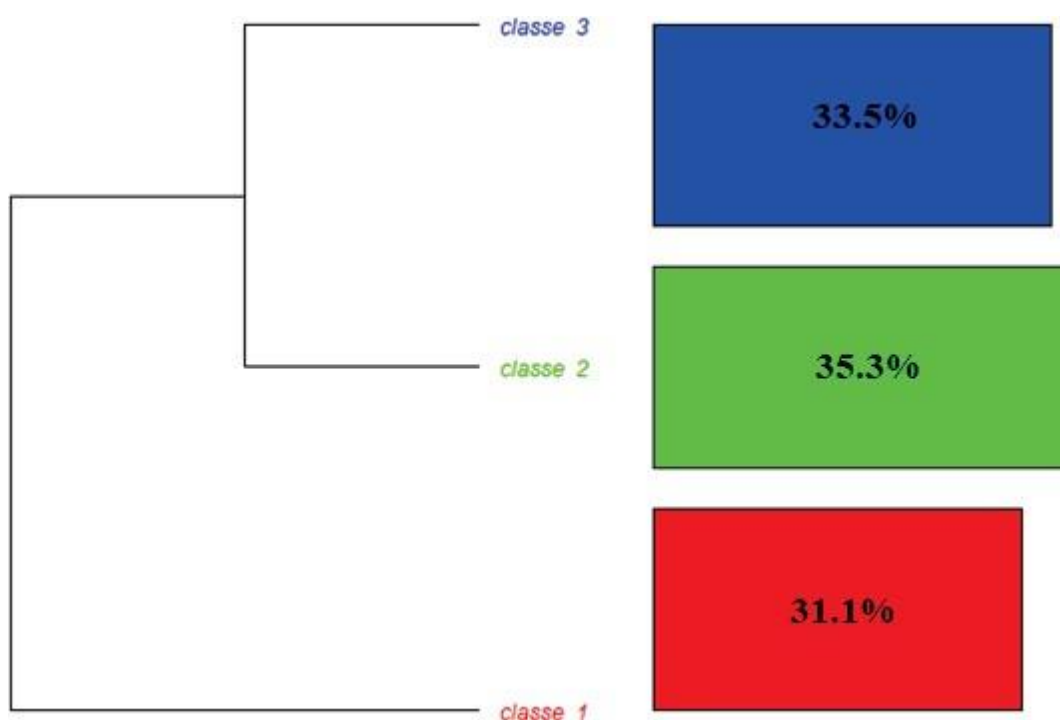
Cluster 2 - 35.4%			Cluster 1 - 29.1%			Cluster 3 - 36.4%		
Word	$\chi^2$	<i>p</i>	Word	$\chi^2$	<i>p</i>	Word	$\chi^2$	<i>p</i>
SCHOOL	18.31	<0,0001	VERY	11.78	0,0005	PSYCHOTHERAPY	17.18	<0,0001
REPORT	16.21	<0,0001	ALSO	11.78	0,0005	SEEK	11.83	0,0005
ISSUE	12.01	0,0005	WORRIED	10.26	0,0013	BROTHER	10.59	0,0011
PSYCHOLOGIC	10.54	0,0011	TIME	10.26	0,0013	FAMILY	9.93	0,0016
AGITATION	9.72	0,0018	LEAVE	10.26	0,0013	ENVIRONMENT	9.72	0,0018
AGGRESSIVENESS	9.68	0,0018	LIFE	9.25	0,0023	COUPLE	9.72	0,0018
SEARCH	8.93	0,0018	HOME	9.08	0,0025	CONFLICT	9.72	0,0018
DIFFICULTY	7.76	0,0028	MATTER	7.59	0,0058	LACK	9.72	0,0018
PROBLEM	7.67	0,0053	FEAR	7.59	0,0058	CHILDREN	7,79	0,0052
BULLYING	7.67	0,0056	BE	7.29	0,0069	EMOTIONALLY	7.67	0,0056

#### *During-the-pandemic period*

The analysis by DHA retained 86.98% of the total corpus. The corpus was automatically divided into 192 TS having 1514 words that occurred 7028 times (mean of forms per TS = 7.88). Out of these, the active forms comprised 933 words, with 280 of them having a frequency higher than three. See **figure 2** for the dendrogram of the DHA with the Reinart method. The analysis resulted in three clusters of words that were grouped into two distinct branches: cluster 1 separately (containing 31.1% of total forms classified) and cluster 2 (35.3%) and cluster 3 (33.5%) united in the second branch.



**Figure 2. Dendrogram of DHA using the Reinart method during-the-pandemic period.**



Cluster 1 corresponds to family conflict and communication. Forms that strongly relate and effectively display this cluster are: “psychotherapy” ( $<0.0001$ ), “couple” ( $<0.0001$ ), “children” ( $<0.0001$ ), “family” ( $<0.0001$ ), “marital” ( $<0.0001$ ), and “relationship” ( $0.0001$ ). TS that mostly represents this category are: “The complaint focused on marital fights and communication problems [...]”, “[...] family seeks psychotherapy at SAP on the recommendation of the psychiatrist, who accompanies the couple's daughter in the treatment of borderline personality disorder [...] historically there has been a correlation between the moments of crises presented and family conflicts, which has worsened with the pandemic.”, “[...] the patients manifested relationship difficulties in maintaining the family routine [...] the family sought psychotherapy at the SAP at the mother's initiative due to family conflicts, especially with the middle child”.

Cluster 2 raises aspects related to housing situation and anxiety symptoms. Forms that are significantly associated and better illustrate this cluster are: “housing”

(<0.0001), “grandfather” (<0.0001), “itch” (0.0021), “eat” (0.0061), “feel” (0.0061), “want” (0.0061), “fear” (0.0061), “brother” (0.0072) and “home” (0.0075). TS mostly associated with this cluster are: “[...] patient lives with her parents and her 2-year-old brother. When the mother is working, she stays at her grandmother's house, taking care of her brother, changing diapers, feeding and caring for.”, “[...] because of the stepfather, the time she lived there was not a good time [...] due to a series of issues, she chose to live with her grandmother again”, “Currently, after the pandemic, they are getting closer, he says that he feels the love of his grandparents as the love that his parents never gave”, “[...] several family issues, parental abandonment, fear of losing her grandmother, considers herself an anxious and impulsive person and showed concerns about the future.”, “[...] excessive fear of going out on the street, meeting her father and getting sick”.

Cluster 3 corresponds to aggressiveness and school relationships. Forms that are significantly associated and better illustrate this cluster are: “school” (<0.0001), “homework” (0.0001), “complaint” (0.0002), “express” (0.0004), “aggressiveness” (0.0004), and “agitation” (0.0004). Examples of TS that better corresponds to this clusters are: “The initial complaint had been constant agitation and a request from the school reporting some conflicts with classmates [...]”, “during the context of the pandemic, the complaint of agitation remained [...] concern about the aggressive behavior that the child shows at school”, “reported that he has some problems related to his body and school life”, “the school indicated that the family sought psychotherapy given their difficulty in socializing”.

**Table 4. Dendrogram showcasing the top 10 words with the highest  $\chi^2$  in each cluster during- pandemic period.**

Cluster 3 - 33.5%			Cluster 2 - 35.3%			Cluster 1 - 31.1%		
Word	$\chi^2$	<i>p</i>	Word	$\chi^2$	<i>p</i>	Word	$\chi^2$	<i>p</i>
SCHOOL	31.17	<0,0001	STAY	28.63	<0,0001	PSYCHOTHERAPY	47.89	<0,0001
HOMEWORK	14.48	0.0001	YEAR	17.38	<0,0001	COUPLE	42.22	<0,0001
COMPLAINT	13.52	0.0002	HOUSING	16.98	<0,0001	CHILDREN	41.81	<0,0001
EXPRESS	12.34	0.0004	GRANDFATHER	16.98	<0,0001	FAMILY	40.76	<0,0001
CLASS	12.34	0.0004	TELL	15.92	<0,0001	SEEK	33.37	<0,0001
AGGRESSIVENESS	12.34	0.0004	SIT	10.67	0.0010	SAP	32.35	<0,0001
AGITATION	12.34	0.0004	ITCH	9.44	0.0021	TREATMENT	20.72	<0,0001
FRIEND	12.34	0.0004	START	8.91	0.0028	MARITAL	18.58	<0,0001
AGRESSIVE	10.22	0.0013	EAT	7.5	0.0061	RELATIONSHIP	14.11	0.0001
FEELING	10.22	0.0013	FEEL	7.5	0.0061	INDIVIDUAL	14.11	0.0001

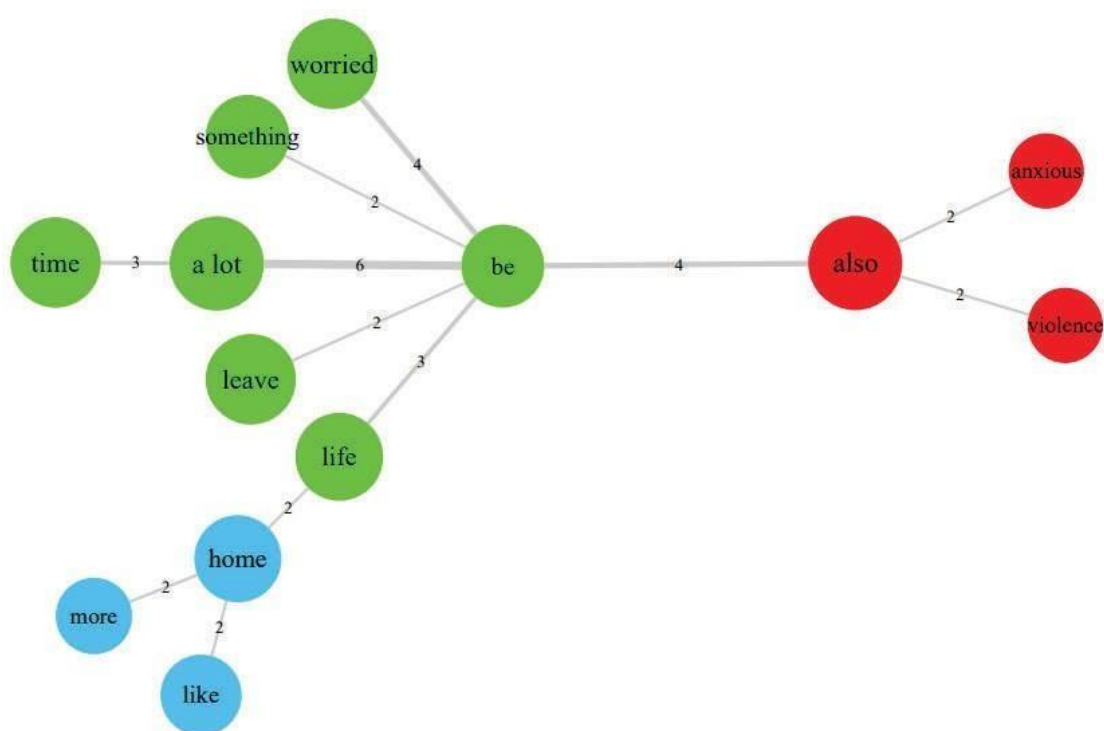
### *Summary of results*

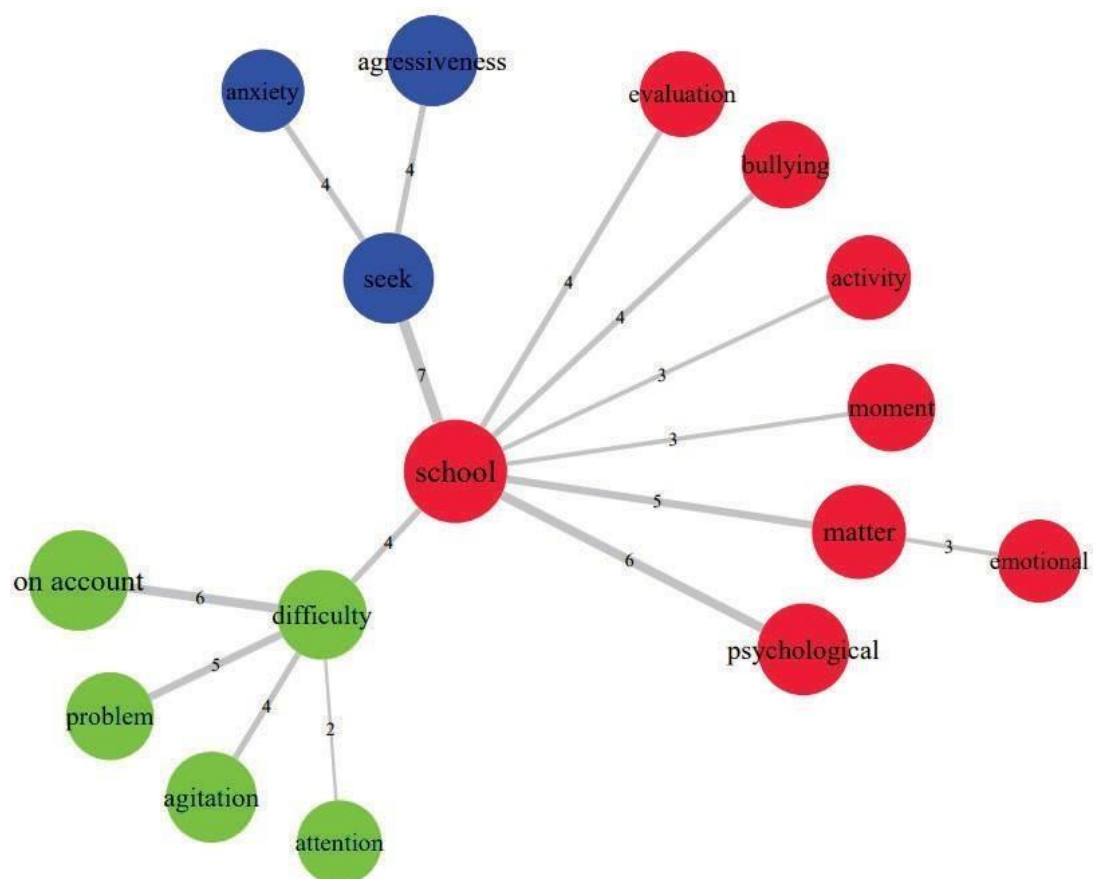
The textual analysis carried out by means of the DHA initially gave rise to three clusters of words with different topics: (1) worries and struggles; (2) emotion and aggressive behavior; and (3) family conflict and communication. For the reports during the pandemic, the analysis also led to three main clusters: (1) family conflict and communication; (2) housing and anxiety; and (3) aggressiveness and school relationships.

## Specificities analysis

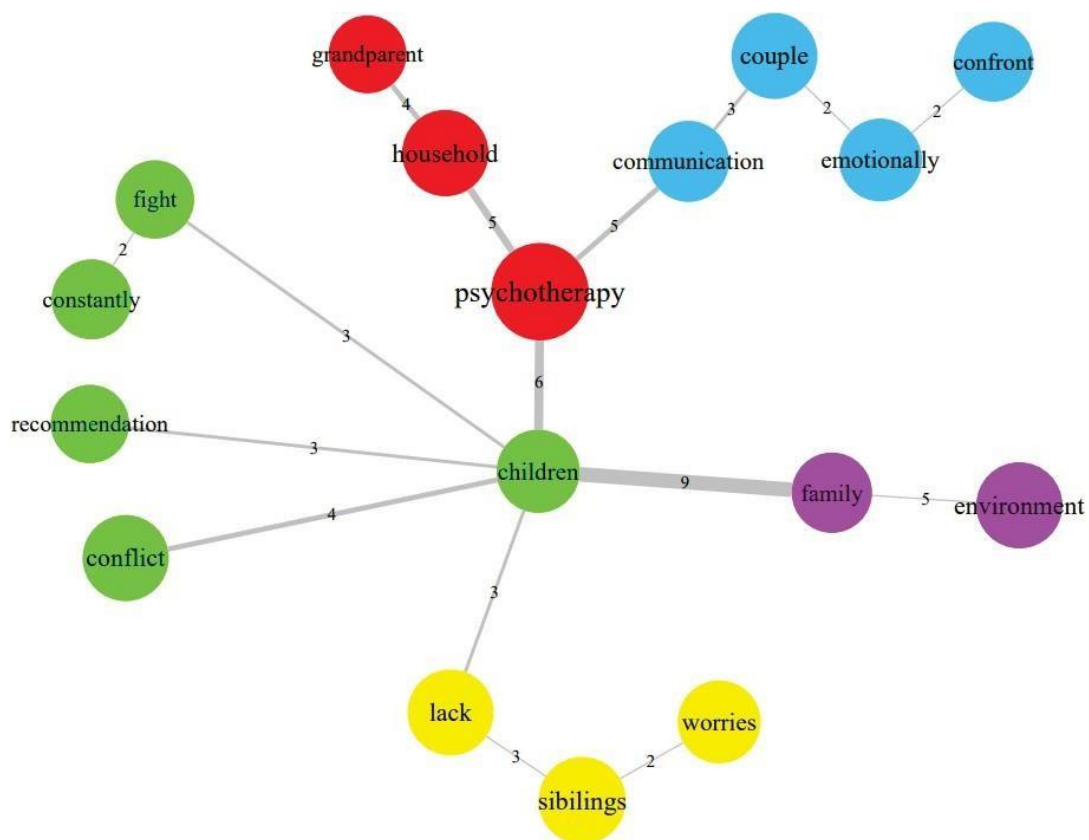
**Figure 3. Co-occurrence and communities for words in cluster 1 (A), 2 (B) and 3 (C) for the pre-pandemic period.**

**A**



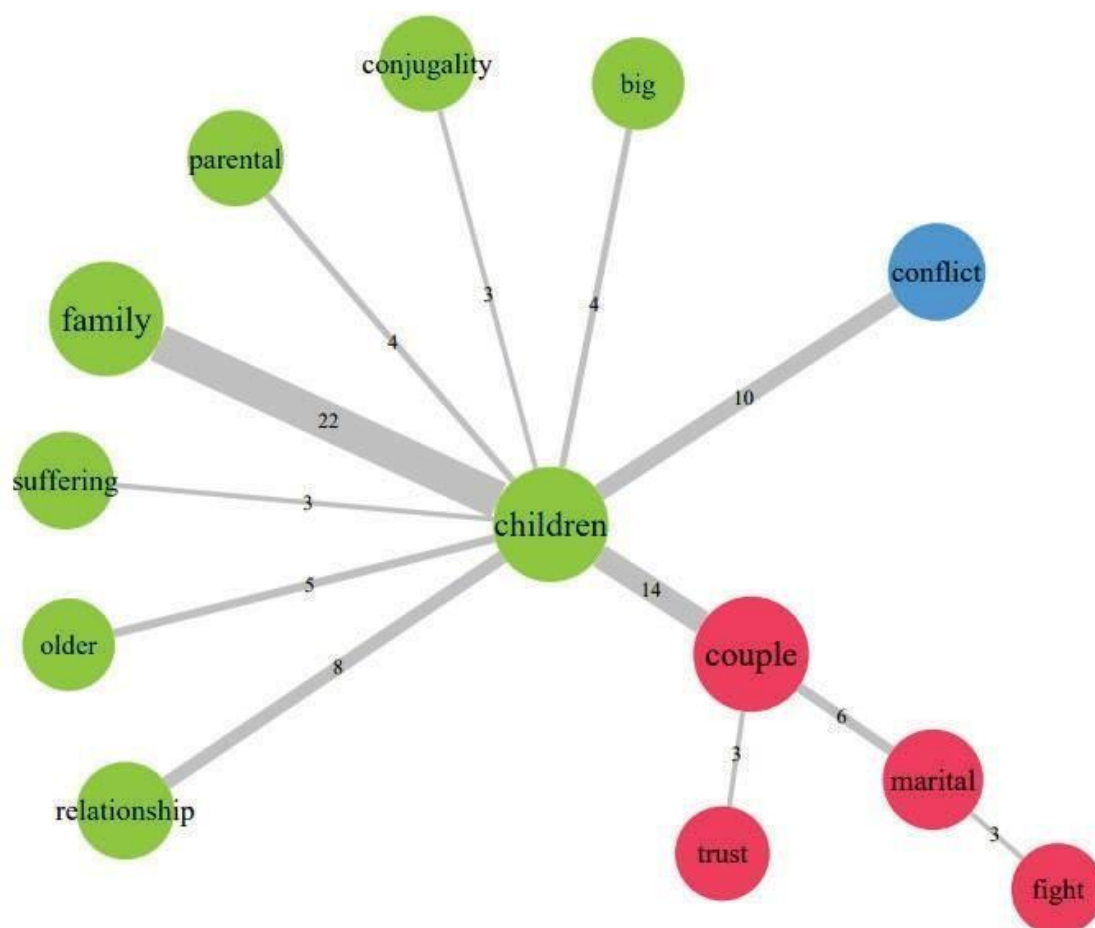
**B**

C



**Figure 4. Co-occurrence and communities for words in cluster 1 (A), 2 (B) and 3 (C) for the during-the- pandemic period.**

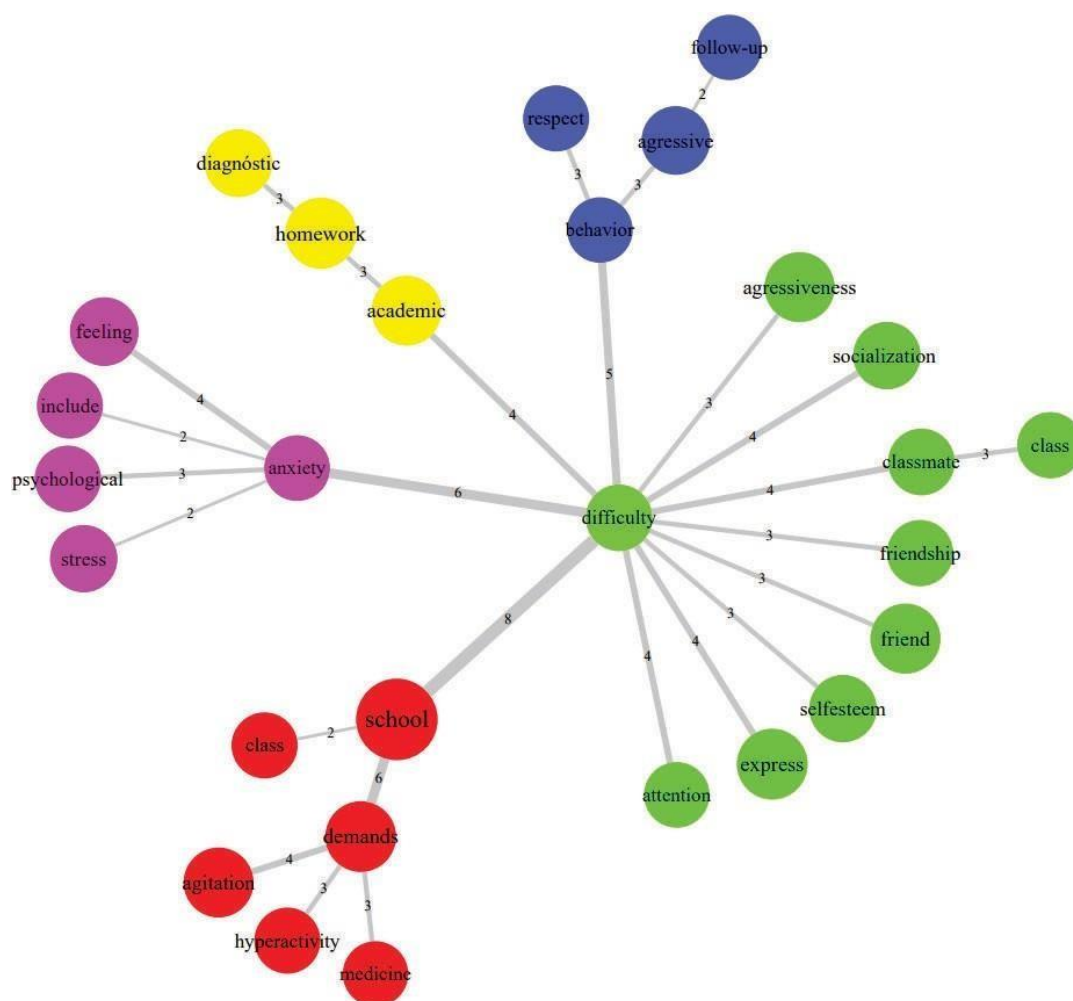
**A**







C



## DISCUSSION

The aim of this quantitative-qualitative study was to uncover the predominant complaints and needs of families who sought support from the Service of Applied Psychology (SAP) at the Pontifical Catholic University of Rio de Janeiro (PUC-Rio) in 2019 (pre-pandemic) and in the years 2020 and 2021 (during the pandemic). The qualitative nature of the study allows us to describe the context of this burden and factors subjectively identified by our population (Ratinaud & Marchand, 2012). By collecting reports, before and during the COVID-19 pandemic, it is possible to carry out an analysis based on a naturalistic event. The importance of that relies on the difficulty of obtaining a comparative analysis with data from before the pandemic (Penninx et al., 2022).

Since we only analyzed families, couples and juveniles' reports, a cluster for family conflicts before and after the pandemic was expected. Interestingly, the DHA analysis evidenced the complaint associated with communication problems, which demonstrates the awareness of the need to improve this specific aspect of the dynamics even prior to the initial interview. Exposing family dynamics and family functioning is understanding how family members relate to each other, how they establish and maintain bonds, how they deal with problems and conflicts, how they perceive each other, the rituals they cultivate, the quality of family rules, the definition of their hierarchy and the delineation of roles assumed by the family members (Delalibera et al, 2015). Furthermore, the Specificities analysis showed that during the COVID-19 pandemic, couples' issues and children's conflicts are more closely associated. This may imply an escalation of fights between couples, with the children remaining in the center of the graph. The pandemic represented significant challenges for parent and couples' relationships, interfering with adaptive relationship processes (e.g. increasing hostility, withdrawal) and risking relationship distress (Pietromonaco & Overall, 2022). Experiencing pandemic-related losses, isolation, separation and personal vulnerabilities while going through lockdown measures can be a threat to relationships dynamics (Pietromonaco & Overall, 2022). In addition to that, most parents had to reorganize their lives to deal with working at home while also managing their entire children's daily routine (de Figueiredo et al., 2021).

In this regard previous analysis detected a specific cluster of housing and anxiety issues. This implies another cluster for family dynamics, this time emphasizing issues of coexistence and housing in addition to the feeling of anxiety in the family. While communication problems remained a significant complaint from family members, a new challenge related to housing and coexistence issues emerged along with the pandemic (Hall et al, 2022). According to the literature, families reported loss of community and freedom of movement in response to lock down measures. Regarding these difficulties, it is important to highlight that individuals and families who are most vulnerable are particularly at risk (Luttik et al, 2020). This plural and diverse cluster centers the issue of housing and family members around sections related to timing, COVID-19 and anxiety symptoms. This organization suggests that, during the pandemic, housing and the family environment may have stressed out and increased anxiety in families. This idea is reinforced when we identify that family conflicts and communication difficulties are also present during this period, reinforcing the need to develop empathy, communication and understanding skills to mitigate the damage caused during the pandemic (Hall et al, 2022).

Furthermore, complaints related to aggressive behavior were observed both before and during the pandemic. Agitation and aggressiveness were related to emotional and relational aspects, with consequences on well-being and socialization. Because this was a topic present in both moments, it is possible to state that it is a relevant and specific issue for this population. Finding ways to intervene and psycho-educate children and adolescents regarding this behavior is, therefore, crucial (Wang et al, 2022). Moreover, during the pandemic period, we can see that the associations are plural allowing us to better specify the relationship among complaints such as: aggressiveness, attention, agitation, socialization, self-esteem, anxiety, stress and academic difficulties.

Finally, the cluster specific for worries and struggles raises aspects related to specific problems of this population, such as the feeling of exhaustion and time management. In addition, is possible to emphasize concerns regarding the high-violence levels in the area where they live and its association with the feeling of anxiety and desire to leave. Those are regular issues that permeate this population and negatively affects its mental health (Heitzman, 2020). Despite representing a

global problem in the most impoverished areas, little has been done over the years to address this problem (Serra & Souza, 2023).

Our study shows that the intensification of complaints is related to the disruption of family dynamics, especially regarding communication and quality of interactions. The worsening of complaints can be observed by the raise in anxiety symptoms and the plurality of demands in all three clusters. It was found that complaints related to family dynamics significantly increased by 31% during the pandemic. This became the primary reason for seeking psychological help at the SAP. It is crucial to identify any lasting effects of changes in family dynamics, as they may negatively impact the bond, connection, affection, and overall quality of family relationships in the long term. It is important for families to prioritize their mental health and seek support and resources as needed, even after the pandemic has subsided. This can include engaging in self-care practices, seeking out mental health treatment, and seeking support from friends and family. By addressing the mental health needs of families, we can help to mitigate the long-term impacts of the pandemic and promote greater overall well-being for families.

## CONCLUSION

Several studies point out that there was an increase in the demand for mental health services during the pandemic. The objective of this work was to identify the main mental health indicators of low-income families through reports of patients from the SAP service. Our study indicated aspects that remained present during both periods (pre-pandemic and during the pandemic) and aspects of transition between psychological issues and demands due to beginning of the pandemic period, either due to the number or the nature of the complaints. 3 main results were identified: (1) problems in family communication seems to have remained and evolved to problems in housing and coexisting; (2) aggression behavior in juveniles is a common issue that remains over time; and (3) anxiety and mental health problems seems to be associated with housing issues and family dynamics.

Our work sought to dissect mental health demands in order to better understand the specific aspects that could be associated with family complaints immediately before and during the COVID pandemic. As we understand that individuals are not

completely separated units, but rather part of a family context, it is essential to establish views encompassing children, adolescents, and family as a whole. Understanding the main clinical demands of the family members may be a better way to promote child adjustment through a cascading process involving caregiver well-being and family processes (Prime, Wade & Browne, 2020). This study is relevant as the consequences of the pandemic are likely to be long-lasting, in part because of the ways in which contextual risk permeates the structures and processes of family systems (Prime, Wade & Browne, 2020). The impact of the COVID-19 pandemic on families may result in enduring emotional and relationship problems. Monitoring the evolution of mental health demands in institutions that provide psychological care is crucial in understanding the effects of the pandemic on economically vulnerable populations. The findings of this study can be useful in better informing professionals and care services on how to manage these issues and prepare for any potential long-lasting consequences. Our goal is to contribute to a better understanding of the impact of the pandemic on families and provide guidance for better handling these challenges. The impacts of COVID-19 identified in the current study highlight the importance of properly addressing the mental health needs of individuals and communities during and after the pandemic. Mental health support and resources, including counseling, therapy, and support groups, should be made widely available to those who need them.

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#### IV. GENERAL DISCUSSION

The general objective of the present thesis was to explore the main reasons that led patients seek psychological treatment before and during the pandemic. In addition to that, we intended to track transitions and escalations of psychological demands of adults and families to better comprehend their perceptions and complaints. Beyond these specific aims, this research also provided an exploratory and descriptive study of the main complaints that reach the SAP over the last years. By analyzing the subjective complaints in the reports, we can help new supervisors and students to better prepare themselves to receive this population, which would potentially improve the quality of service and more objectively guide these students.

Both studies pointed out to family and relationships related complaints with emphasis on housing. This shows us that the COVID-19 pandemic may have disrupted the quality of interactions between family members, in addition to disrupting the bond, connection and communication between them. This demonstrates the need to develop social skills such as empathy, sharing, listening, collaborating, cooperation, patience and respecting boundaries to mitigate the damage caused during the pandemic. This type of therapeutic resource can be implemented both in the reparative and preventive sense (Minuchin, 1965). Having a proper notion of the importance and confluence of this issue for this population can help students to better prepare themselves, be attentive and develop specialized protocols.

Another interesting finding was regarding the proportion of male and female seeking treatment. While family and child psychotherapy has a well-divided number of boys and girls, the proportion of adult men and women who seek individual psychotherapy is more disproportionate with only 21-24 % of men adhering. Children are usually brought to therapy by their parents and not by their own guidance; this may be behind the proportional number of boys and girls in the SPA. Despite this, throughout life men seem to distance themselves from mental health services (Cusack et al, 2006). This data raises concerns about the psychological health of low-income men who may be ignoring emotional, social and psychological issues (Rice et al, 2021).

## V. FINAL CONSIDERATIONS

The consequences of the pandemic in all its scopes had a major effect on mental health. The interruption of the daily routine, the financial and health insecurity, the fear of contagion and the alarm of newspaper reports are major stressors that can precipitate the generalization of feelings of fear and anxiety even after the pandemic. When we take into account the daily challenges of low-income communities, this possibility of generalization of hopelessness and despair becomes even more worrying. In order to address these problems, it is necessary for government agencies and organizations to provide targeted support to mitigate the profound and long-lasting effects of the pandemic on mental health. Moreover, it is important to raise awareness about the subjective ways in which the pandemic affected every aspect of Brazilians' lives and destigmatize the call for help.

Both studies carry the limitations of previously collected data, which may have generated a large proportion of residual information in the corpus. However, the studies generate a clear and demarcated notion of the main sufferings and anguish of this population alerting to future consequences and common challenges yet to be faced. Hereby we hope to help professionals and care services in the management of these issues, in addition to shedding light on risk factors for the development of psychological disorders.

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