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ORIGINAL ARTICLE

Emotional experiences and coping styles of Brazilians in Canada during the Covid-19 pandemic facing stressful situations with their family and friends in Canada and Brazil

Experiências emocionais e estilos de enfrentamento de brasileiros no Canadá durante a pandemia de Covid-19 ao enfrentar situações estressantes com sua família e amigos no Canadá e no Brasil

Experiencias emocionales y estilos de afrontamiento de brasileños en Canadá durante la pandemia de Covid-19, durante situaciones estresantes vividas con sus familiares y amigos en Canadá y Brasil

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ABSTRACT

Objective: to identify the emotional experiences and coping strategies of Brazilians in Canada during the COVID-19 pandemic in the face of stressful situations for themselves, their families, and friends in Canada and Brazil. **Method:** an online survey (July – October 2021) with an original questionnaire was used with Brazilians living in Canada to explore emotional experiences during the COVID-19 pandemic and their coping strategies in the face of stressful situations. Data analysis was descriptive statistics. **Results:** participants (n=387) reported that main worries related to the safety of significant ones living in Brazil due to high risk of infection, lack of self-protection, as well as restricted access to healthcare services. Results identified individuals' emotional experiences and the strategies they used to deal with them. Experiences seemed to be less stressful and relatively manageable through the use of social media, physical exercises, contact with nature, and reconnection with religion and spirituality. Feelings of worry and fear and efforts at problem-solving arose for Brazilians in Canada mainly from issues lived by their families and friends in Brazil. A sense of safety regarding themselves, their friends, and relatives in Canada was also identified. **Conclusion:** results corroborated that the COVID-19 pandemic brought uncomfortable emotions in response to stressful and uncertain situations. Respondents acknowledged their experience with these types of emotions and reported diverse adaptive strategies depending on their approach to the situation.
***Keywords*:** *Canada; Immigrants; COVID-19 pandemic; Psychological distress.*

RESUMO

Objetivo: identificar experiências emocionais e estratégias de enfrentamento dos brasileiros no Canadá durante a pandemia de COVID-19 diante de situações estressantes para si mesmos, suas famílias e amigos no Canadá e no Brasil. **Método:** uma pesquisa online (julho – outubro de 2021) com um questionário original foi utilizada com brasileiros vivendo no Canadá para explorar experiências emocionais durante a pandemia de COVID-19 e suas estratégias de enfrentamento diante de situações estressantes. A análise dos dados utilizou o método de estatística descritiva. **Resultados:** os participantes (n=387) relataram que as principais preocupações estavam relacionadas à segurança de entes queridos vivendo no Brasil devido ao alto risco de infecção, falta de autoproteção, além do acesso restrito a serviços de saúde. Os resultados identificaram as experiências emocionais dos indivíduos e as estratégias que utilizaram para lidar com elas. As experiências pareciam ser menos estressantes e relativamente gerenciáveis com o uso das redes sociais, exercícios físicos, contato com a natureza e reconexão com a religião e a espiritualidade. Sentimentos de preocupação e medo, assim como esforços para solucionar problemas, surgiram para os brasileiros no Canadá principalmente devido a questões vividas por suas famílias e amigos no Brasil. Também foi identificado um senso de segurança em relação a si mesmos, seus amigos e parentes no Canadá. **Conclusão:** os resultados corroboraram que a pandemia de COVID-19 trouxe emoções desconfortáveis em resposta a situações estressantes e incertas. Os participantes reconheceram sua experiência com esse tipo de emoção e relataram diversas estratégias adaptativas dependendo de sua abordagem à situação.
Descritores: *Canadá; Imigrantes; COVID-19; Angústia Psicológica.*

RESUMEN

Objetivo: identificar las experiencias emocionales y las estrategias de afrontamiento de brasileños en Canadá durante la pandemia de COVID-19, tanto en situaciones estresantes individuales como en aquellas vividas en relación con familiares o amigos en Canadá y Brasil. **Método:** se utilizó una encuesta digital con un cuestionario dirigido a brasileños en Canadá para explorar sus emociones vividas durante la pandemia de COVID-19 y las estrategias de afrontamiento utilizadas para enfrentar situaciones estresantes. Los datos fueron analizados mediante estadística descriptiva. **Resultados:** para los participantes del estudio, su mayor preocupación estuvo relacionada con la seguridad de sus familiares o allegados que vivían en Brasil, debido al alto riesgo de infección en el contexto brasileño, su limitada capacidad de autoprotección, y el acceso restringido a los servicios de salud. Los resultados también identificaron las emociones experimentadas por los participantes y las estrategias de afrontamiento utilizadas para manejarlas. El uso de redes sociales, la actividad física, el contacto con la naturaleza y la reconexión con creencias religiosas y espirituales fueron las estrategias de afrontamiento más comunes. La preocupación, el miedo y los esfuerzos por ayudar a resolver problemas fueron las emociones predominantes vividas por los brasileños en Canadá. La preocupación por la seguridad propia, así como la de amigos, familiares y personas cercanas que vivían en Canadá, también fueron experiencias importantes para los participantes del estudio. **Conclusión:** los resultados de este estudio afirman que la pandemia de COVID-19 generó emociones dificultosas en respuesta a situaciones estresantes y de incertidumbre en brasileños en Canadá. Los participantes reconocieron haber experimentado este tipo de emociones y reportaron diversas estrategias adaptativas según su forma de afrontar la situación.
Descritores: *Canadá; Inmigrantes; COVID-19; Distrés Psicológico.*

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Introduction

Immigration to Canada has increased significantly in recent years with more than 235,000 immigrants coming to Canada each year since 2000.[1] Beginning in the 1980s, Brazilian immigration to Canada has also increased considerably.[2] There were 5,295 Brazilian immigrants living in Canada prior to 1991; 15,120 in 2006, and 36,830 in 2016.[2] Resettlement to another country is a major challenge to one's mental health since it involves social integration, struggles with discrimination, as well as difficulties mobilizing one's talents and realizing their professional dreams.[3] There are also challenges related to adapting to cultural norms, religious practices, and social networking/supports. Social support is a strong protective factor against mental health problems[4] and there is clinical evidence that shows it can lead to positive psychological outcomes such as increased self-esteem, resilience, and self-efficacy.[5,6]

In Canada, a survey found that 82.1% of participants reported social connection with friends and family to be a key coping strategy during the COVID-19 pandemic[7] highlighting the importance of developing ways to engage friends and family remotely to prevent the spread of the virus and promote mental health well-being. During the COVID-19 pandemic, recent immigrant's reported fair or poor mental health in relation to the COVID-19 pandemic compared to their Canadian counterparts.[8] Research is required to examine the emotional experiences of the pandemic within immigrant communities in Canada. With the increase in Brazilian immigration to Canada, it is important to explore the psychological experiences during the pandemic among this cultural group to better understand and address their health needs. There was no scientific literature exploring the emotional health impact of Brazilian immigrants in Canada, let alone studies that assess the COVID-19 pandemic's emotional impact. Furthermore, no specific studies were identified in the international literature focusing on Brazilian immigrants, refugees, undocumented immigrants, stateless individuals, or even those who were unable to leave a foreign country during the COVID-19 pandemic's emergency phase.

Conceptual framework

Our research was guided by an original conceptual framework that posed questions to participants designed to prompt a wide array of responses, as well as supported data analysis and interpretation. The framework was inspired by Lazarus and Folkman's Transactional Model of Stress and Coping (TMSC).[9] The TMSC, as a theoretical model, considers coping to be cognitive and behavioral efforts to adapt to specific situations appraised to be stressful by an individual, with stressful situations classified as involving

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harm/loss, threat, or challenge. The TMSC seeks to capture the emotional response or "style" that is evoked during a stressful situation. "Emotion-focused" styles can include strategies of avoidance, minimization, distancing, selective attention, positive comparisons, and get positive values from negative events, which can be adaptive or maladaptive. Another coping strategy is "problem-focused," which involves an active search to solve stressful situations. More recently, Folkman[10,11] proposed a "meaning-focused" coping style whose types are benefit finding, benefit reminding, adaptive goal processes, and recording priorities. Whatever the coping strategy, the individual tries to reshape significance, priority, and value. Personal beliefs and values that allow a person to keep up their motivation and sustain their coping strategies during a stressful situation are the focus.[11] The framework drove the retrieval and identification of a tendency towards coping strategies but did not allow for their in-depth analysis due to the superficiality of the collected responses.

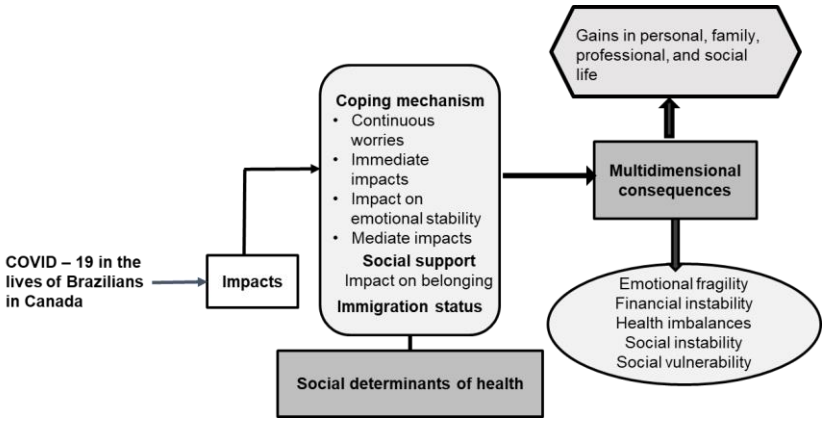

Figure 1 - Conceptual Framework. Toronto (ON), Canada, 2021.

Research question

What was the overall emotional experience of Brazilians living in Canada during the COVID-19 pandemic?

Objective

To identify emotional experiences of Brazilians in Canada during the COVID-19 pandemic and the coping strategies they adopted in the face of stressful situations for themselves, their families, and friends in both Canada and Brazil.

Method

This research was reviewed and approved by the Toronto Metropolitan University Research Ethics Board: REB #2021-194-1; Lakehead University: Romeo File No: 1468750;

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and St. Mary's University Research Ethics Board: 21-111 all located in Canada. All participants provided explicit online, informed consent.

The research design was a modified online survey. It was created from a qualitative perspective[12] aimed at redesigning methodological strategies to make the recruitment and data collection feasible in unknown and especially hard-to-reach settings.[13] The survey questionnaire applied senior qualitative and quantitative researchers' expertise in qualitative and quantitative research. It was implemented as a part of a convergent mixed-methods design.[14] The design has a single-phase approach with combined collection of quantitative data and gathering of qualitative evidence but with separate analysis of both evidence for a further comparison of both sets of results.

Participants

Brazilians living in Canada composed the purposeful sample.[15] The criteria of inclusion were: (a) 18 years and above; (b) born in Brazil or of Brazilian descent; (c) living in Canada during the COVID-19 pandemic; (d) access to the internet; and (e) willingness to provide the implied consent for online survey and/or for phone-online individual interview. The criteria of exclusion were: (a) younger than 18 years of age at the time of the research; (b) not living in Canada during the COVID-19 pandemic; and (c) if in Canada but without a relative living in Brazil during the COVID-19 pandemic.

Criterion sampling, which is a form of purposive sampling, was used to recruit and select participants who have experienced the phenomenon of interest.[16] A variety of strategies were used for the recruitment, such as: (a) informative video (https://www.youtube.com/watch?v=pio7-UgQNhQ); (b) snowball sampling; and (c) posting announcements on social media and conducting online presentations supported by community stakeholders.

Data Collection

Data collection ran from July – October 2021 following the wide dissemination of a recruitment video and announcement among Brazilian professional and social networks in Canada.

Measures

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The original questionnaire did not intend to serve as a coping inventory tool; it was not designed so that the answers could allow for the categorization of coping strategies. The use of the theoretical model inspired us to create the answer options as possibilities of actions and behaviors socially and legally contextualized and acceptable to what was experienced in Canadian society at the time of data collection. Only a questionnaire created, tested, and validated by psychology experts would allow the allocation of answers into coping categories.

The questionnaire had 26 close-ended questions and among them, five with “other” as a response option, which allowed for short narrative responses, and one open-ended question. The questionnaire was available in English, Portuguese, and French, and was designed for the exploratory descriptive part of the research. The major content sections were basic demographics (gender, sex, age, province of residence), time living in Canada, identity as a health professional or health sciences student, number of people living in the household, barriers and factors that prevented travel to Brazil (e.g., student visa, work permit, etc.), frequency to which participants had maintained contact with family and friends in Brazil and in Canada, and those individuals’ health needs in Brazil during the COVID-19 pandemic. The questionnaire explored the pandemic’s impacts on personal emotions, family members, acquaintances, or friends who experienced any severe health problem, hospitalization, or death due to the pandemic in Brazil, sought help to deal with emotions caused by the pandemic, sought help from their Brazilian social network in Canada, ways of dealing with emotions, self-perception of general health, access to emotional health services in the Portuguese language, practice of socializing, approach to coping with the pandemic, concerns related to relatives in Brazil, and strategies to monitor family events in Brazil. The type of scales used to measure the items on the instrument were categorical, continuous scales, and ranking.

Questionnaire validity was not established representing threats to construct validity. The team used two specific strategies to secure content validity by having themselves as natural experts regarding the phenomenon under investigation. The development of the questions and response options was done in two rounds: (a) Brazilian co-investigators (n=7) who were living in Canada designed questions based on their own experiences of geographical separation from Brazilian relatives living in Brazil, and (b) Brazilian co-investigators (n=8) who were living in Brazil helped develop questions that expressed the uniqueness of lived situations during the COVID-19 pandemic, time-bounding is the main threat to external validity because the results cannot be generalized to past or future situations.[14] Participants’ histories can be listed as a threat to internal validity because their

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experiences may jeopardize the researcher's ability to draw correct inferences about the population from the data.

The first author (a Brazilian diaspora nursing faculty fluent in Portuguese, English, and French) supervised the translation of the questionnaires by the bilingual co-investigators (French/Portuguese and English/Portuguese) and reviewed them to secure semantic appropriateness. All questionnaires were revised and edited to accommodate native speakers using simple, plain language to allow for high comprehension by the prospective participants. The decision to present multiple response options for an online questionnaire follows the current trends of online research[13] within the perspective of global health.

The online survey was used because it was the only feasible way to reach participants in distant geographic regions without depending on government post services, which were highly disturbed during the period of data collection. Moreover, this methodological choice was also due to the known higher response rate of online questionnaires compared to other forms of delivery, thus avoiding bias by non-response.[16,17]

Analysis

There was no inferential analysis because this research was descriptive and did not formulate inferential hypotheses, and no inferential tests were performed. Sociodemographic data and answers to closed-ended questions were compiled and organized in tables and graphics as descriptive statistics[14] by the *Opinio* platform. This statistical analysis was intended to describe and synthesize data about a particular aspect or characteristics of the data set[18] as those inherent to the new phenomenon of emotionally reacting to the COVID-19 pandemic's psychological experience and its unknown significant variables.

Results

The lived experience of Brazilians in Canada was unique with respect to safety, freedom, and approaches to self-care (e.g., access to alcohol and drugs for personal use) and social inclusiveness (e.g., offer of health services without a proof of immigration status), since all individuals in the country had access to healthcare services and to health protection. Such a context created a sense of safety and protection that was identified among the participants.

This section describes the results as absolute and relative frequency. The answers of 387 participants in Portuguese (n=293), English (n=91), and French (n=3). Tables 1 to 5 compile results per each participants' preferred language. Table 1 displays the overall

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demographic range of the participants. Participants were residing in 8 out 10 Canadian provinces as per the following distribution: Ontario (n=178; 46%), Manitoba (n=72; 17 %), Quebec (n=64; 16%), Alberta (n=19; 5 %), New Brunswick (n= 13; 3%), British Columbia (n=13; 3%), Nova Scotia (n=8; 2%), and Saskatchewan (n=6; 1.5%). When asked about possibility of travelling to Brazil, 166 participants (43%) informed that a valid student, work, or tourist visa was not applicable to their situation in Canada, but 231 participants (57%) had no visa restrictions to travel to Brazil starting March 2020, because such a condition was inapplicable to their immigration status. The participants' overall health status was expressed by "doing well" (n=253; 65%) when asked how much the COVID-19 pandemic had impacted their emotions. On the other hand, 95 participants (39%) answered "a little" to the same question, and 43 participants (11%) "a lot," which explained the response of 242 participants (62.5%) who had reported that they had not sought help to deal with their emotions.

Table 1 - Sociodemographic (per language of responses*; n = 387). Toronto (ON), Canada, 2021.

Variable	English (n=91; 23%)	Portuguese (n=293; 76%)	French (n=3, 1%)
Sex			
Female	69 (76%)	221 (75%)	3 (100%)
Male	22 (24%)	60 (24%)	-
Intersex	-	1 (0.3%)	-
Time living in Canada			
less than 18 months	3 (3%)	15 (5%)	-
19 months-less than 2 years	4 (4%)	20 (7%)	-
2–5 years	42 (46%)	132 (45%)	1 (33%)
6–10 years	19 (21%)	57 (19%)	-
11–15 years	9 (10%)	23 (7%)	1 (33%)
16–20 years	2 (2%)	15 (5%)	-
+ 20 years	12 (13%)	20 (7%)	1 (33%)
Household size			
live alone	7 (8%)	20 (0.7%)	-

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myself and 1 person	35 (38%)	124 (42%)	1 (33%)
myself and 2 persons	23 (25%)	51 (17%)	-
myself and 3 persons	20 (22%)	63 (21.5%)	-
myself and 4 persons	3 (3%)	20 (7%)	2 (67%)
myself and 5 persons	3 (3%)	6 (2%)	-
Health professional			
No	80 (88%)	246 (84%)	2 (67%)
Yes	10 (11%)	37 (13%)	1 (33%)
Student in health sciences			
No	88 (97%)	275 (94%)	3 (100%)
Yes	3 (3%)	9 (3%)	-

The sociodemographic data indicated that most participants were women (n=293; 76%), living in Canada between 2 to 5 years (n=175, 45%), whose families are composed of two individuals (n=160, 41%), with most participants neither health professionals nor students in health sciences. In the three groups of participants there were severe cases of COVID-19 infection among their acquaintances (n=203; 52%), close relatives (n=178; 46%), close acquaintances (n=163; 42%), and other individuals that participants casually knew through their own social media network (n=124; 32%). The unavailability of health services in Portuguese to deal with emotional issues and comfortably express needs was noted by 282 participants (73%). The weekly practice of social contact (e.g., phone calls, WhatsApp, etc.) was a relevant strategy to manage the impact of geographic and physical distancing as presented in Table 2.

Table 2 - Contact with family and social networks during the COVID-19 pandemic (per language of responses*; n = 387). Toronto (ON), Canada, 2021.

Variable	English (n=91; 23%)	Portuguese (n=293; 76%)	French (n=3; 1%)

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Contact with Brazilian friends/colleagues/acquaintances in Canada			
Daily	27 (30%)	86 (29%)	-
Weekly	33 (36%)	116 (40%)	1 (33%)
Every two weeks	7 (8%)	18 (6%)	-
Monthly	2 (2%)	8 (3%)	1 (33%)
Whenever I need	13 (14%)	28 (9.5%)	-
Rarely	7 (8%)	27 (9%)	1 (33%)
Contact with Brazilian friends/colleagues/acquaintances in Brazil			
Daily	27 (27.5%)	-	1 (33%)
Weekly	34 (37%)	95 (32%)	2 (67%)
Every two weeks	8 (9%)	-	-
Monthly	8 (9%)	80 (27%)	-
Whenever I need	11 (12%)	-	-
Rarely	3 (3%)	-	-
Contact with your family members who live in Brazil			
Daily	40 (44%)	151 (51.5%)	2 (67%)
Weekly	36 (40%)	98 (33%)	1 (33%)
Every two weeks	6 (7%)	10 (3%)	-
Monthly	1 (1%)	2 (0.7%)	-
Whenever I need	6 (7%)	17 (6%)	-
Rarely	2 (2%)	5 (2%)	-

Note*: absolute frequency is smaller than the sub-sample size due to the lack of responses in some items.

Table 3 summarizes participants' most popular answers related to their self-perceived mode of living during the COVID-19 pandemic. It shows that most participants (n=202; 52%) perceived themselves to be more protected from this pandemic in Canada, which made them feel positive about their mode of living. On the other hand, several participants indicated feelings of anxiety and distress related to being away from their families during the pandemic (n=178; 46%), which manifested in overeating (n=174; 45%), doing fewer physical activities (n=140; 36%), feeling a little agitated, nervous, or even having palpitations, and feeling "paralyzed," or unable work like before or even to do the activities

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of daily life (n=141; 36%). Among “other” answers related to changes in mode of living affected by the pandemic, the participants indicated a high demand for information queries on pandemic management in both Brazil and Canada added to reports that one’s life remained unchanged. However, most commonly, participants indicated feelings of anguish, sadness, mourning and much anxiety about the future.

Table 3 - Situations that best described participants' self-perceived mode of living, during the COVID-19 pandemic (per language of responses*; n = 387). Toronto (ON), Canada, 2021.

Statement	English** (n=91; 23%)	Portuguese** (n=293; 76%)	French** (n=3; 1%)
I am feeling good as I think I am more protected in Canada.	58 (64%)	142 (48.5%)	2 (67%)
I am sad about being away from my family in this difficult time.	49 (54%)	127 (43%)	2 (67%)
Some days, I feel like I want to eat more.	44 (48%)	130 (44%)	-
I have been doing less physical exercise due to working more hours at home.	38 (42%)	101 (34.5%)	1 (33%)
Sometimes, I feel a little agitated or nervous or have palpitations.	34 (37%)	125 (43%)	1 (33%)
Sometimes, I feel “paralyzed,” I am unable to do daily basis tasks or work like before.	31 (34%)	110 (37.5%)	-

Note: * absolute frequency is smaller than the sub-sample size due to the lack of responses in some items; ** results from a question with 21 statements as choice of responses. Participants provided more than one response for this question, which surpasses 100%.

Table 4 summarizes participants’ responses regarding their main worries related to their families in Brazil.

Table 4 - Main worries related to family in Brazil and situations that caused the most worries since the beginning of the COVID-19 pandemic (per language of responses*; n = 387). Toronto (ON), Canada, 2021.

Statement	English (n=91; 23%)	Portuguese (n=293; 76%)	French (n=3; 1%)
Main worries related to family**			

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I am afraid that my family members who are in the at-risk group will get COVID-19.	67 (74%)	222 (79%)	2 (67%)
I am afraid that a family member will pass away, and I will not be able to say goodbye.	65 (71%)	198 (70.5%)	-
I am afraid that my family members may not have access to health services if they need them.	46 (50.5%)	123 (44%)	-
I worry that my family members are not properly socially isolated and taking care of themselves.	46 (50.5%)	136 (48%)	2 (67%)
I worry about the emotional well-being of my family during the pandemic.	40 (44%)	194 (69%)	-
I worry that my family members are exposed to the virus as they cannot work from home.	34 (37%)	92 (33%)	2 (67%)
Situations causing most worry***			
Having family in Brazil that are in the at-risk group.	67 (77%)	131 (53%)	-
Knowing that my family in Brazil cannot get the vaccine fast enough.	54 (62%)	149 (60%)	2 (67%)

Notes: *absolute frequency is smaller than the sub-sample size due to the lack of responses in some items; **results from a question with 9 statements as choice of responses; ***results from a question with 25 statements as choice of responses. Participants provided more than one response for this question, which surpasses 100%.

Table 5 summarizes the strategies used to monitor family events in Brazil and of coping strategies used with family, friends, and relatives. Participants who had frequent contact with their families, some of them decided not to worry them excessively or follow-up about situations in Brazil causing suffering, such as community violence and their difficulties accessing healthcare due to social isolation and quarantine. Other participants reported no family or close friend loss, which had no emotional impact. Studying spirituality, practicing meditation, appreciating life's simplicity, chatting with relatives, and playing/enjoying time with children were additional coping strategies presented by participants.

Table 5 - Ways of monitoring family events in Brazil and of coping with family members', friends' or acquaintances' hospitalization or death due to the COVID-19 infection (per language of responses*; n = 387). Toronto (ON), Canada, 2021.

Statements	English (n=91; 23%)	Portuguese (n=293; 76%)	French (n=3; 1%)
Strategies used to monitor family events**			
I am part of a family group on social media platforms	52 (58%)	204 (72%)	3 (100%)
I make a video call at least once a week.	47 (52%)	151 (53%)	1 (33%)

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I always see my family members' posts on social media.	40 (44%)	141 (50%)	1 (33%)
I make a video call whenever I feel like it.	40 (44%)	172 (61%)	-
I make an audio call whenever I feel like it.	31 (34%)	116 (41%)	2 (67%)
Coping strategies***			
I watch movies or TV shows.	37 (45%)	128 (52%)	2 (67%)
I pray.	35 (43%)	82 (33%)	2 (67%)
I try to go out for a walk, run, or bike ride to refresh my thoughts.	28 (34%)	87 (35%)	-
I listen to music.	27 (33%)	78 (32%)	-
I am concerned at times, but I recognize that this situation is inevitable.	24 (26.3%)	84 (34%)	2 (67%)

Notes: *absolute frequency is smaller than the sub-sample size due to the lack of responses in some items; **results from a question with 13 statements as choice of responses; ***results from a question with 26 statements as choice of responses. Participants provided more than one response for this question, which surpasses 100%.

Evidence indicates that participants' main worries related to the safety of significant ones living in Brazil due to high risk of infection, lack of self-protection, as well as restricted access to healthcare services (e.g., vaccination, hospitalization, emergency care, admission to intensive care units, and outpatient care). In Canada, the common use of communication platforms and social media somehow alleviated the impact of stressful situations. Moreover, less worry about personal safety was due to feeling protection in Canada despite the contradictory feelings of insecurity due to job termination. Key coping practices included walking, contact with nature, biking, prayers, as well as reconnecting with one's religion and spirituality.

In sum, in terms of their emotional well-being, Brazilians in Canada experienced a high sense of safety during the COVID-19 pandemic while they worried about their at-risk relatives in Brazil. To deal with such worries they used monitoring strategies of family events, mainly by using social media and communication digital platforms.

Discussion

Our study and questionnaire identified and detailed many types of emotional experiences noted by Brazilians living in Canada during the COVID-19 pandemic. It is important to note that there may have been an imbalance among participants regarding the language of participation, but they were free to choose the language of preference to answer it. There was no intention to compare types of responses by used language.

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Furthermore, analysis of the results indicated that participants' feelings of worry, fear, and understanding of potential solutions to their problems, related mainly to the daily life of their families and friends in Brazil. However, they also indicated concern and a sense of safety regarding themselves, their friends, and relatives in Canada. These experiences appear to have been less stressful and relatively manageable. Despite the results displayed in Tables 3–5, they did not allow inferences to be drawn regarding predominant coping strategies adopted for two reasons: first, the classification of coping strategies was not a research objective; second, it was risky to infer predominant responses by listing them as typical coping strategies without potential misidentification and misinterpretation. Therefore, we opted for a descriptive approach to presenting the evidence.

In March 2020, Canada's diverse and largest cities – Toronto, Montreal, and Vancouver – provided wide access to COVID-19-related healthcare to respond to the needs of vulnerable ethnic-minorities.[19] Our survey did not ask participants about their immigration status (e.g., refugee, permanent residency, work or study permit, visitor, undocumented, etc.). Interestingly, a study implemented in the province of Ontario exploring racism and discrimination during the COVID-19 pandemic those who perceived racism and discrimination were only 9% of the participants self-identifying as "other," groups of identification including the Latino ones and of those 2.58% holding a temporary/student visa and 6% of non-identified status.[20]

Trust in all levels of government's public health guidelines among individuals living in Canada influenced their self-perception of their ability to conform to guidelines and/or be able to mitigate the threat of COVID-19 infection.[21] Our results confirmed such self-perception and attest to experiences of fear and anxiety about infection during everyday activities supported by the contact with close social networks to get necessary information and material social support, including emotional support from significant friends and family members living abroad.[21] Our sub-sample of men was 21% needs to be compared to other Canadian evidence that found that individuals most-at-risk for severe loneliness during the pandemic were immigrant men with small social networks.[22]

The exacerbation of immigrants' social vulnerabilities was examined by international literature reviews indicating impacts on immigrants' mental health as expressed by symptoms of anxiety and depression.[23] The support provided by immigrants' culture and religion to solve complex health issues (mostly for those without history of psychological illnesses) was analyzed: having positive religious coping strategies helped to manage COVID-19-related stress and promote mental and physical well-being.[24] In another literature review,[25] the confluence between COVID-19 infection and other non-communicable

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diseases was explored showing the further aggravation of health disparities. Authors of these studies warned that the syndemic impact of COVID-19 infection and mental health on underlying chronic illnesses remains only partially understood.

Inequities in access to healthcare services are exacerbated for immigrants who may reject seeking help for their mental health problems due to their partial knowledge about where/how to access such services. A study evaluating the effects of the COVID-19 pandemic on the mental health of Hispanic/Latino immigrants in North America reported an increase of mental health issues among them. Reasons included inadequate awareness of services and how to access them, sociocultural factors, stigma, financial constraints (i.e., lack of insurance), immigration status, discrimination, and language barriers.[26]

Our findings showed that, other than directly seeking healthcare services, participants used a variety of coping strategies to manage stress and anxiety during the pandemic. Mostly, participants adopted self-care activities by increasing screen-time activities, praying, listening to music, or doing physical activities, which corroborated evidence from other studies about engagement in outdoor physical activities and maintaining on virtual connection with family as helpful.[27] During the pandemic, rural Latino immigrants in the US used coping strategies, such as religious and faith-based practices and social supports by connecting virtually or over the phone with friends and family members to support their mental health.[28]

Social connectedness for coping, as per a media study about Google searches for prayer, revealed the intensified demand for religious practice during the COVID-19 pandemic' early months.[29] Interest in prayer, as captured by Internet searches, related to having a religious goal: to have an emotion-focused coping strategy for dealing with adversity. International studies identified that looking for refuge in religious practices happened globally at all levels of income, social inequity and insecurity, and all major religions, except Buddhism, indicating a global rise in religiosity.[29] Religion helps with the comprehension of existential matters, feelings, loss, and acts as a therapeutic resource.[30] Our evidence about the dependence on religious practices for comfort and well-being corroborates Brazilian results about religion as a measure of self-care and self-knowledge. Regular worship practices provided emotional comfort by reducing stress, anxiety, and depression.[31] For religious individuals in the US and UK, COVID-19-related anxiety strengthened their beliefs while for non-religious individuals, such anxiety provoked high skepticism and weakened overall religious trust/beliefs.[32] To pray and trust on the protective power of faith was also seen among Catholics during the pandemic.[33]

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Regardless of the novelty brought by the evidence of how the experiences of Brazilians living in Canada aligned with these recent studies, our research has important methodological limitations restraining the results' generalization: (1) the survey non-validity represents threats to construct validity, which also restrained our ability to perform powerful or meaningful analysis within the conceptual framework; (2) the undetermined sample representativeness due to the unknown total number of Brazilians living in Canada during the first nineteen months of the COVID-19 pandemic; (3) the non-approval by the Research Ethics Board of intrusive questions limited a more in-depth exploration. It would be informative to learn about individual strategies to overcome daily obstacles, according to the specific circumstances encountered in provincial, cultural, and social contexts; and, (4) despite the wide publicity of our project in different social media and environments, it was not possible to recruit those representing gender diversity, ill individuals, or those without access to computers or the internet due to public health restrictions caused by the COVID-19 pandemic. Altogether, these limitations jeopardize the whole picture of psychological fragilities and strengths of this population. Moreover, the nature of anonymous surveys made it infeasible to validate the data interpretation with some participants.

These findings help close the knowledge gap on how an ethnocultural minority composed of individuals integrated into a protective context in a host society dealt with the emotional impact of COVID-19 pandemic on their lives. Findings also contribute to the literature warning about the post-pandemic need of redesigning health services to respond to the particularities of ethno-linguistic minorities and provide social and psychological support during a health crisis and across a person's life span. Theoretical implications regarding the use of TMSC include a better understanding of emotional experiences and coping strategies by immigrants, refugees, and stateless and undocumented individuals in similar emergencies. It can refine TMSC as a meaningful and culturally sensitive framework to analyze other humanitarian crises in diverse host societies.

Conclusion

Our results responded to the exploratory research question about the nature of the overall emotional experience of Brazilians living in Canada during the COVID-19 pandemic. Moreover, our results uncovered a range of embedded coping strategies deployed by participants whose interpretation was supported by the TMSC's theoretical concepts and assumptions.

Results corroborated with the general consensus that the COVID-19 pandemic was unprecedented and unforeseen, bringing uncomfortable emotions, such as anxiety, worry,

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and fear, as typical responses to stressful and uncertain situations. Participants acknowledged their experiences with these types of emotions and reported diverse adaptive strategies depending on their approaches to the situation. A more detailed analysis of these coping strategies drawn from interviews with 70 Brazilians living in Canada is the focus of another manuscript under development.

This research contributes to strengthening existing links in the area of Canada-Brazil scientific collaboration, especially related to global health aimed at understanding minority populations' adaptation in a host society. For participants, it might be beneficial to them to be aware of their inestimable contribution to researchers interested in the health of Brazilians in Canada by assisting researchers to understand the emotional experiences related to the COVID-19 pandemic amongst them and how the mitigation strategies to reduce the spread of the virus has impacted their coping strategies to deal with separation from relatives both in Brazil and in Canada. As members of an ethnic-cultural minority, Brazilians in Canada should be included in future health promotion initiatives acknowledging their situation as a linguistic minority, high sense of belonging, and emotional endurance. Such efforts promise to build a healthier community of immigrants to Canada, which make them better situated to contribute to their host country and strengthen Canada's diverse communities.

Data Access

The data sets used and/or analyzed during the current research are not available due to informed consent restrictions.

Authors Contributions

Study conception: Margareth Santos Zanchetta, Idevania Geraldina Costa, Stephanie Pedrotti Lucchese, Marcelo Medeiros, Rosana Barbosa, Walterlânia Silva Santos, Kelly Graziani Giacchero Vedana, Vanessa Fracazzo, Kênia Lara Silva, Maria Odete Pereira. **Data collection:** Margareth Santos Zanchetta, Vanessa Fracazzo. **Data analysis and interpretation:** Margareth Santos Zanchetta, Idevania Geraldina Costa, Stephanie Pedrotti Lucchese, Marcelo Medeiros, Talita Maciel, Walterlânia Silva Santos, Kelly Graziani Giacchero Vedana, Vanessa Fracazzo, Kênia Lara Silva. **Manuscript writing:** Margareth Santos Zanchetta, Idevania Geraldina Costa, Stephanie Pedrotti Lucchese, Marcelo Medeiros, Talita Maciel, Rosana Barbosa, Walterlânia Silva Santos, Kelly Graziani Giacchero Vedana, Vanessa Fracazzo, Kênia Lara Silva, Maria Odete Pereira. **Manuscript critical review:**: Margareth Santos Zanchetta, Stephanie Pedrotti Lucchese, Marcelo

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Conflict of interest

The authors declare no conflict of interest.

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