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Psychosocial determinants and the COVID-19 Pandemic: a correlational study

Determinantes psicossociais e a Pandemia de COVID-19: um estudo correlacional

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Abstract

Objective
The COVID-19 pandemic has impacted the mental health of the population, exacerbating social inequalities. The aim of this study is to analyze, within the pandemic context, the association between specific psychosocial determinants and symptoms of depression, anxiety, alcohol consumption, and suicidal ideation.

Method
This is a quantitative, cross-sectional, and correlational study. Data were collected through online questionnaires from individuals in the general population who utilized a health support service via chat modality in 2020.

Results
The findings revealed that alcohol consumption was associated with gender, post-pandemic income, and financial problems or unemployment. Feelings of depression/sadness were associated with education and having received government emergency financial aid, while feelings of anxiety and nervousness were associated with income.

Conclusion
It was concluded that further investigation into social determinants of health and their relationship with the impacts of the pandemic on mental health is warranted. This exploration aims to develop strategies to minimize these consequences.

Keywords: COVID-19; Mental health; Pandemic; Social determinants of health.

Resumo

Objetivo
A pandemia de COVID-19 impactou a saúde mental da população, intensificando desigualdades sociais. O objetivo deste trabalho é analisar a associação entre alguns determinantes psicossociais e sintomas de depressão, ansiedade, consumo de álcool e ideação suicida nesse contexto.

Método
Trata-se de um estudo quantitativo, transversal e correlacional, cujos dados foram coletados por meio de questionários online entre pessoas da população geral que utilizaram um serviço de acolhimento em saúde via chat em 2020.

Resultados
Verificou-se que o consumo de álcool se mostrou associado ao gênero, renda após a pandemia e problemas financeiros ou desemprego; sentimentos de depressão/tristeza à escolaridade e ter recebido auxílio emergencial do governo; e sentimentos de ansiedade e nervosismo à renda.

Conclusão
Consideramos imprescindível estudar os determinantes sociais da saúde e sua relação com os impactos da pandemia na saúde mental, a fim de que estratégias sejam desenvolvidas para minimizar essas consequências.

Palavras-chave: *COVID-19; Saúde mental; Pandemia; Determinantes sociais da saúde.*

The virus responsible for the Coronavirus Disease 2019 (COVID-19) disease was first reported in China in late 2019, causing the largest pandemic the world has ever witnessed and becoming the primary global public health concern. Epidemiological data published by the World Health Organization indicate that the Coronavirus (SARS-CoV-2, Severe Acute Respiratory Syndrome Coronavirus 2) has affected more than 750 million people, resulting in six million deaths worldwide (World Health Organization [WHO], 2023a).

The severe social crisis generated by the pandemic is regarded as one of the most significant public health problems in recent decades (WHO, 2020). This event raises heightened concerns about the mental health of the population (Faro et al., 2020), as this period is characterized by psychological and social disturbances that impact society's coping capacity (Ministério da Saúde, 2020). Studies emphasize the necessity of considering mental health care as fundamental as primary health care during public health crises (Douglas et al., 2009; Park & Park, 2020; Stevenson et al., 2009).

The high rates of infection, mortality rates surpassing those of seasonal flu, such as those of the Influenza group (Verity et al., 2020), coupled with restrictive measures and social isolation, result in a significant increase in levels of fear and anxiety, amplifying the harms caused by the disease (Ahorsu et al., 2020; Cassiani-Miranda & Campo-Arias, 2020). Furthermore, COVID-19 has instilled a sense of insecurity in the population regarding personal adjustments to lifestyle and the daily functioning of society, altering interpersonal relationships (Lima et al., 2020; Ozili & Arun, 2020).

Specifically, insecurity about changes in the way individuals consume, produce, and interact socially during the pandemic period was exacerbated by insufficient information about the clinical consequences of the virus on health. This, in turn, led to the emergence of stigmas and discriminations directed towards individuals of certain origins and within specific contexts, such as those who have had contact with the virus or those of Asian descent (Lin, 2020). The fear of being infected by the new coronavirus is understandable, especially given its higher mortality rate, but when this condition is heightened, the emergence of pathologies and mental disorders, such as anxiety and depression, is observed (Satici et al., 2020).

A study conducted by the Fundação Osvaldo Cruz (Fiocruz, Oswaldo Cruz Foundation) in 2020 indicates that the likelihood of Brazilian essential workers developing any pathologies and mental disorders due to the COVID-19 pandemic is higher than in European countries. This estimation can be explained by the sociopolitical context the country was experiencing, as well as the social health determinants of the population, which were aggravated by the pandemic

context (De Boni et al., 2020). It is important to emphasize that the Brazilian Ministry of Health and various international organizations have already expressed the urgency of mental health care (European Centre for Disease Prevention and Control [ECDC], 2020; Ministério da Saúde, 2020; WHO, 2020).

Understanding psychosocial determinants in this scenario is crucial for guiding public health policies and strategies. The analysis of these factors can help understand the different ways in which people respond to the stress of the pandemic, influencing their behavior regarding prevention measures, treatment, and psychosocial consequences (Alamilla & Cano, 2022; Solar et al., 2022). Additionally, understanding these determinants can assist in identifying vulnerable groups and developing more effective interventions to protect them (Jain & Chandrashekar, 2020; Tipirneni, 2021). Recent studies have highlighted the importance of these factors in the pandemic, as evidenced by the systematic review by Xiong et al. (2020) on the psychological effects of COVID-19 on the general population.

Therefore, investigations in the field of mental health during the pandemic are essential to implement care actions in the face of the adversities marking this period (Brooks et al., 2020; Ho et al., 2020; Lima et al., 2020; Ozili & Arun, 2020). In light of this need, this article aims to analyze the association between symptoms of depression, anxiety, suicidal ideation, alcohol consumption, and specific psychosocial determinants during the COVID-19 pandemic period.

Method

This is a quantitative, cross-sectional study with a non-probabilistic sample and a correlational design. Thus, the objective was not to establish a cause-and-effect relationship but to obtain measures of association between variables, as detailed later.

Participants

Ninety-nine individuals, over the age of 18, located in 12 Brazilian states, participated in this research. They were recruited through an online, Chat-based health support service during the critical period of the COVID-19 pandemic in 2020 (Amorim-Ribeiro et al., 2021; Gomide et al., 2020). Importantly, the study included individuals who had demonstrated prior mental distress and sought assistance. Therefore, it is a sample derived from a clinical population. Researchers invited users to participate in the study a few weeks after they had initially sought support. Invitations were sent via email to all individuals who provided this information during their interactions.

Instruments

The researchers developed an online questionnaire using the JotForm platform. As this was a COVID-19-related study, the research team obtained free access to all features offered by the platform, including compliance with the Health Insurance Portability and Accountability Act (HIPAA). Thus, it is an online and self-administered questionnaire. Multiple-choice questions were organized into the following sections: sociodemographic data (age, gender, city-state, race, marital status, education, and income); social impacts due to COVID-19 (receipt of government financial aid during the pandemic, having displayed COVID-19 symptoms, knowing someone diagnosed for COVID-19, death in the family due to the disease, impact on income, and impact on work/study activities); psychosocial impacts due to COVID-19 (symptoms of anxiety, depression, alcohol consumption, suicidal ideation, domestic violence).

Procedures

Participants received an email invitation explaining the research objectives and with a link to the questionnaire. In total, 500 emails were sent, and 99 responses were received back. After the initial invitation emails, two additional email reminders were sent with a 15-day interval to increase the response rate.

The research project was submitted to and approved by the Research Ethics Committee of the Federal University of Juiz de Fora Upon accessing the health support website, a Free and Informed Consent Form was presented to users, informing them, among other aspects, of the possibility of being contacted for voluntary participation in subsequent studies if they provided their email address.

Data Analysis

After data collection, the database was exported to the IBM Statistical Package for the Social Sciences (SPSS, version 15) IBM®SPSS® (version 15) where the data were organized and analyzed. The main variables associated with mental health, specifically depressive symptoms, anxiety, suicidal ideation, and alcohol consumption, were obtained through the question "What was the reason for seeking this service?" Through multiple-choice responses, dichotomous variables (yes/no) were defined. For the other variables, their dichotomization was also carried out for better frequency balance in the data analysis. Only the gender and current occupation variables remained unchanged as their response options could not be recoded.

To achieve the study's proposed objectives, statistical analyses of descriptive or central tendency measures were conducted, such as frequency (n), percentage (%), mean (M), and standard deviation (SD). For association measures, inferential statistical analyses were employed. For the age variable, the Student's t-test was used, as the assumptions of normality and homogeneity of variance were met. For categorical variables, the Chi-Square test (χ^2) was employed. Furthermore, to check whether the distribution of sample data was normal, the Kolmogorov-Smirnov test was used. A 95% confidence interval ($p < 0.05$) was adopted for all inferential analyses.

Results

Table 1 displays the social determinants of health analyzed in the research. It can be seen that the sample is characterized by individuals with an average age of 27.8 years, predominantly female (75.8%), self-declared White (73.7%), single (83.8%), with completed or ongoing higher education (63.6%), students (54.5%), and a family income of up to three minimum wages (68.7%). The impacts of the pandemic can be seen in detail in Table 1. Noteworthy are the reported frequencies for feelings of sadness or depression (64.6%), anxiety or nervousness (90.9%), suicidal ideation (18.2%), and increased alcohol consumption (21.2%).

In the following tables, we present correlation analyses based on the outcomes of Alcohol Consumption, Feelings of Anxiety or Nervousness, Feelings of Depression or Sadness, and Suicidal Ideation. The latter, having not shown statistical significance as the primary comparative variable, is not included in the results. Statistical significance was observed solely in the comparison with alcohol consumption, as presented below. It is also important to highlight that the age variable did not correlate with the others and showed no difference between the compared means. Therefore, age-related data were also not included in the tables.

Table 1
Sociodemographic and COVID-19 pandemic characteristics

Characteristics	*M*	*SD*
Age (years)	27.8	10.6
Gender		
Female	75.8	75
Male	19.2	19
Non-binary	5.1	5
Skin Color		
White	73.7	73
Non-white	26.3	26
Marital status		
Single	83.8	83
Married	16.2	16
Education		
Up to secondary school	36.4	36
Higher Education (complete or incomplete)	63.6	63
Current occupation		
Student	54.5	54
Employed	27.3	27
Unemployed	18.2	18
Family income		
Up to 3 minimum wage salaries	68.7	68
Above 3 minimum wage salaries	26.3	26
Could not answer	5.1	5
Income after the pandemic		
Remained the same or increased	59.6	59
Reduced or lost their income	40.4	40
Do you know someone who caught COVID?		
Yes	32.3	32
No	67.7	67
Work or study shifted to a remote format?		
Yes	78.8	78
No	21.2	21
Did you receive emergency financial aid from the government?		
Yes	38.4	38
No	61.6	61
Family member or friend died of COVID?		
Yes	22.2	22
No	77.8	77
Experienced work or academic overload during the pandemic?		
Yes	30.3	30
No	69.7	69
Experienced financial problems or unemployment during the pandemic?		
Yes	22.2	22
No	77.8	77
Experienced relationship problems during the pandemic?		
Yes	50.5	50
No	49.5	49
Feelings of depression or sadness during the pandemic?		
Yes	64.6	64
No	35.4	35
Feelings of anxiety or nervousness during the pandemic?		
Yes	90.9	90
No	9.1	9
Suicidal ideation during the pandemic?		
Yes	18.2	18
No	81.8	81
Alcohol consumption during the pandemic?		
Reduced or the same	78.8	78
Increased	21.2	21

Table 2 contains data related to the comparison between reported Alcohol Consumption and social determinants of health. Variables that showed statistical significance in the comparison were: gender, post-pandemic income, and financial problems or unemployment. Regarding gender, there was a proportional increase in alcohol use among non-binary individuals (80%) and men (26.3%) ($\chi^2 = 11.86$, $p = 0.003$). Concerning the first group, this difference in alcohol consumption proportion may have occurred due to the limited number of respondents identifying as non-binary. Financial problems during the pandemic period were also associated with increased alcohol consumption, with 24% of participants experiencing such problems showing an increase in consumption ($\chi^2 = 3.89$, $p = 0.049$). Another variable with a significant association was the presence of suicidal ideation and increased alcohol consumption (44%) ($\chi^2 = 7.18$, $p = 0.008$). The remaining variables did not show statistically significant differences in the comparison.

Table 2

Association between alcohol consumption and COVID-19 Pandemic-related variables

1 of 2

Variables	Alcohol consumption during the Pandemic			
	Unchanged		Increased	
	n	%	*n*	%
Gender*				
Female	63	84.0	12	16.0
Male	14	73.7	5	26.3
Non-binary	1	20.0	4	80.0
Skin Color				
White	56	76.7	17	23.3
Non-white	22	84.6	4	15.4
Marital status				
Single	67	80.7	16	19.3
Married	11	68.8	5	31.2
Education				
Up to secondary school	25	69.4	11	30.6
Higher education	53	84.1	10	15.9
Current occupation				
Student	45	83.3	9	16.7
Employed	19	70.4	8	26.9
Unemployed	14	77.8	4	22.2
Income after the pandemic*				
Remained the same	52	88.1	7	11.9
Reduced or lost their income	26	65.0	14	35.0
Work or study shifted to a remote format?				
Yes	60	76.9	18	23.1
No	18	85.7	3	14.3
Received emergency financial aid from the government				
Yes	29	76.3	9	23.7
No	49	80.3	12	19.7
Family member or friend died of COVID-19				
Yes	15	68.2	7	31.8
No	63	81.8	14	18.2
Experienced work or academic overload				
Yes	22	73.3	8	26.7
No	56	81.2	13	18.8
Experienced financial problems or unemployment*				
Yes	14	63.6	8	36.4
No	64	83.1	13	16.9

Table 2
Association between alcohol consumption and COVID-19 Pandemic-related variables

2 of 2

Variables	Alcohol consumption during the Pandemic			
	Unchanged		Increased	
	n	%	*n*	%
Experienced relationship problems				
Yes	38	76.0	12	24.0
No	40	81.6	9	18.4
Suicidal ideation*				
Yes	10	55.6	8	44.0
No	68	84.0	13	16.0

Note: * $p < 0,05$; COVID-19: Coronavirus Disease 2019.

Table 3 presents data related to the comparison between the report of Feelings of Anxiety or Nervousness and social determinants of health. Only the income variable exhibited marginal significance in the data comparison. It is observed that 97.5% of the research participants experienced a decrease or total loss of income during the period and reported symptoms of anxiety ($\chi^2 = 3.53$, $p = 0.06$). The remaining variables did not show statistically significant differences.

Table 3
Association between feelings of anxiety/nervousness and COVID-19 pandemic-related variables

1 of 2

Variables	Anxiety/Nervousness during the pandemic			
	Unchanged		Increased	
	n	%	*n*	%
Gender				
Female	7	9.3	68	90.7
Male	2	10.5	17	89.5
Non-binary	0	0.0	5	100.0
Skin Color				
White	7	9.6	66	90.4
Non-white	2	7.7	24	92.3
Marital status				
Single	7	8.4	76	91.6
Married	2	12.5	14	87.5
Education				
Up to secondary school	5	13.9	31	86.1
Higher education	4	6.3	59	93.7
Current occupation				
Student	3	5.6	51	94.4
Employed	3	11.1	24	88.9
Unemployed	3	16.7	15	83.3
Income after the pandemic*				
Remained the same	8	13.6	51	86.4
Reduced or lost their income	1	2.5	39	97.5
Work or study shifted to a remote format?				
Yes	7	9.0	71	91.0
No	2	9.5	19	90.5
Received emergency financial aid from the government				
Yes	5	13.2	33	86.8
No	4	6.6	57	93.4
Family member or friend died of COVID-19				
Yes	2	9.1	20	90.9
No	7	9.1	70	90.9

Table 3
Association between feelings of anxiety/nervousness and COVID-19 pandemic-related variables

2 of 2

Variables	Anxiety/Nervousness during the pandemic			
	Unchanged		Increased	
	n	%	*n*	%
Experienced work or academic overload				
Yes	2	6.7	28	93.3
No	7	10.1	62	89.9
Experienced financial problems or unemployment				
Yes	3	13.6	19	86.4
No	6	7.8	71	92.2
Experienced relationship problems				
Yes	5	10.0	45	90.0
No	4	8.2	45	91.8

Note: *p < 0,05; COVID-19: Coronavirus Disease 2019.

Table 4 presents data related to the comparison between the report of Feelings of Depression or Sadness and social determinants of health. Variables that showed statistical significance were: education and having received emergency financial aid from the government. A higher proportion of individuals with symptoms of depression was observed among those with lower educational attainment (80.6%) compared to those pursuing or having completed higher education (55.6%) ($\chi^2 = 6.27$, $p = 0.012$). Regarding individuals who received emergency financial aid from the government, a higher report of symptoms of depression was observed (81.6%) compared to those who did not receive said benefit (54.1%) ($\chi^2 = 7.75$, $p = 0.005$). The remaining variables did not show statistically significant differences in the comparison.

Table 4
Association between feelings of depression/sadness and COVID-19 pandemic-related variables

1 of 2

Variables	Depression/Sadness during the Pandemic			
	Unchanged		Increased	
	n	%	*n*	%
Gender				
Female	28	37.3	47	62.7
Male	7	36.8	12	63.2
Non-binary	0	0.0	5	100
Skin Color				
White	25	34.2	48	65.8
Non-white	10	38.5	16	61.5
Marital status				
Single	27	32.5	56	67.5
Married	8	50.0	8	50.0
Education*				
Up to secondary school	7	19.4	29	80.6
Higher education	28	44.4	35	55.6
Current occupation				
Student	19	35.2	35	64.8
Employed	13	48.1	14	51.9
Unemployed	3	16.7	15	83.3

Table 4

Association between feelings of depression/sadness and COVID-19 pandemic-related variables

Variables	Depression/Sadness during the Pandemic			
	Unchanged		Increased	
	n	%	*n*	%
Family Income				
Up to 3 minimum wage salaries	20	29.4	48	70.6
Above 3 minimum wage salaries	13	50.0	13	50.0
Did not know	2	40.0	3	60.0
Income after the pandemic				
Remained the same	22	37.3	37	62.7
Reduced or lost their income	13	32.5	27	67.5
Work or study shifted to a remote format?				
Yes	29	37.2	49	62.8
No	6	28.6	15	71.4
Received emergency financial aid from the government				
Yes	7	18.4	31	81.6
No	28	45.9	33	54.1
Family member or friend died of COVID-19				
Yes	5	22.7	17	77.3
No	30	39.0	47	61.0
Experienced work or academic overload				
Yes	8	26.7	22	73.3
No	27	39.1	42	60.9
Experienced financial problems or unemployment				
Yes	4	18.2	18	81.8
No	31	40.3	46	59.7
Experienced relationship problems				
Yes	11	22.0	39	78.0
No	24	49.0	25	51.0

Note: $^{*}p < 0,05$; COVID-19: Coronavirus Disease 2019.

Discussion

The COVID-19 pandemic has significantly impacted the lives of the global population by intensifying mental health problems and social inequalities, perpetuating a cycle of care precariousness. Given the specific aspects related to people's lifestyles during this pandemic, it becomes crucial to explore the social determinants of health (Castro-Silva et al., 2021). In this regard, the results of this study allowed us to understand the relationship between some of these determinants and indicators of anxiety, depression, suicidal ideation, and alcohol consumption in a sample of users from an online mental health support service (Gomide et al., 2020).

The present study obtained more pronounced indicators of anxiety (90.90%) and depression (64.60%) among its respondents when compared to other countries and the national scenario. It is important to note that, despite higher levels, a significant increase in these indicators was observed across all of them. In Mexico, Pedroza-Cabrera et al. (2021) conducted a study with characteristics similar to this article (online care, clinical population, etc.), where participants exhibited depression and anxiety symptoms of 23.73% and 17.72%, respectively, highlighting an increase compared to earlier periods documented by their service.

Other studies, such as Serafín et al. (2021), observed that almost half of the participants expressed symptoms of depression (46.4%), anxiety (39.4%), and stress (42.2%). In Chile, Andrades-

Tobar et al. (2021) found a prevalence of 49.5% of individuals with mild/high depression and 43.3% with mild/high anxiety. In a similar proportion, in Argentina, Alomo et al. (2020) pointed out that 45.0% of participants manifested feelings of sadness. In correlational analyses, similarities were found between the studies concerning anxiety, depression, work, and income.

In the research conducted by Andrades-Tobar et al. (2021), a correlation was observed between unemployment, depression, and anxiety, similar to the results obtained in this study, which indicated a significant correlation between decrease/loss of income after the start of the pandemic and anxiety symptoms. In addition, a significant correlation was also found between feelings of depression/sadness and receiving emergency financial aid from the government, a situation that in the Brazilian context indicates low income and/or unemployment. Similarly, Alomo et al. (2020) reported that depressive mood symptoms were correlated with the level of salary reduction since the beginning of the pandemic. Those who had a reduction of 80% or more showed the most significant negative mood changes.

In a comprehensive study conducted with the general population in Brazil, Barros et al. (2020) found less pronounced rates than those found in this article, but they demonstrated that during the period of pandemic-related social distancing, 40.4% of Brazilians constantly felt sad or depressed. Even more concerning, 52.6% reported feelings of anxiety and nervousness, especially among those with a history/diagnosis of depression. In contrast to the present study, where no association was found between age and feelings of depression/sadness and feelings of anxiety/nervousness, Barros et al. (2020) obtained higher indicators of these variables among younger respondents.

Regarding age, unlike our findings, a systematic review analyzing the association between social determinants and mental health during COVID-19 found that younger people were more affected by symptoms of depression and anxiety (COVID-19 Mental Disorders Collaborators, 2021). The same trend was observed concerning alcohol consumption (GBD 2020 Alcohol Collaborators & Wang, 2022). In our study, the absence of a difference regarding age may be attributed to the higher concentration of our sample among younger individuals (M = 27.8, SD = 10.6 years) and the fact that these individuals sought intervention services due to the presentation of some of these complaints.

Regarding alcohol consumption during the pandemic, an overall increase was observed among populations in various countries, although in varying proportions. In this study, an increase in consumption was observed among 21.2% of the participants. In a longitudinal study conducted by Pedroza-Cabrera et al. (2021), similar to the one mentioned earlier, the increase was 32.45% in the first measure and 30.51% in the second, becoming the primary reason for seeking online intervention. Before the pandemic, it was the second most stated reason for seeking intervention. Comparatively, a study conducted in the metropolitan area of Buenos Aires, Argentina, identified a higher growth in alcohol consumption than observed in this study, with 45% of respondents reporting an increase in alcohol consumption (Camarotti et al., 2020). In another study involving the general population of Argentina, an increase of approximately 35% in alcohol consumption was recorded (Etchevers et al., 2020), with reduced social interaction and the overall emotional state provoked by the quarantine highlighted as primary contributing factors (Camarotti et al., 2020). However, the main reasons indicated were anxiety (57%), the need for relaxation (47%) (Etchevers et al., 2020), and the length of the workday, either due to an increase or a decrease in working hours (Camarotti et al., 2020). This study aligns with the aforementioned studies in its correlation between heightened alcohol consumption and factors such as reduced income after the pandemic and financial challenges or unemployment.

In Brazil, in a nationwide study with 45,161 participants, Malta et al. (2020) pointed out a worsening of lifestyles and an increase in health-risk behaviors during the pandemic. The results indicated a 17.6% increase in alcohol consumption, similar to the 21.2% obtained in this study. Their study also suggested that the increase in alcohol consumption during the pandemic may be associated with stressors such as fears and uncertainties about the future and employment, the well-known risk of death, as well as sadness and anxiety. Indirectly, but similarly, in the present study, alcohol consumption was also associated with financial problems/unemployment and income after the pandemic. Additionally, in the research conducted by Ahmed et al. (2020) in China, similar characteristics were observed among the participants. There was a 29.1% increase in alcohol consumption, which was related to increased depression, anxiety, and reduced well-being resulting from restrictions and the total lockdown decreed by local authorities.

Studies around the world have indicated that, in the context of the COVID-19 pandemic, fear of the unknown, numerous uncertainties, and certain social determinants of health can lead to the progression of various mental health problems (Sandín et al., 2020; Serafim et al., 2021; Shigemura et al., 2020). The extent of the psychological impact of a pandemic on populations is likely influenced not only by the characteristics of the disease manifestation in that context, which encompass the cultural and social factors of the affected countries, but also by the methodologies employed for its measurement (Andrades-Tobar et al., 2021).

Finally, despite the relaxation of public health measures in 2022 and the increase in vaccine coverage, COVID-19 still deserves global attention. According to the report of the COVID-19 International Health Regulations Emergency Committee (IHR-2005), the pandemic should continue to be considered a Public Health Emergency of International Concern (PHEIC) (WHO, 2023b). Some countries still face various challenges with its progression and resulting comorbidities. In this regard, as new studies emerge over time, they may provide additional clarity on the magnitude of the impacts on mental health (Serafim et al., 2021). Psychological consequences are known to potentially be more prevalent and enduring than the direct consequences of COVID-19 (Ornell et al., 2020; Schmidt et al., 2020). It may be considered premature to categorically state its psychological and emotional consequences (Andrades-Tobar et al., 2021), although it is important to estimate them to adopt measures that can minimize the implications in societies.

Study Limitations

This study, despite offering significant contributions to the fields of Psychology and Public Health, has some limitations. One limitation is that the sample consists of a clinical population, specifically individuals seeking mental health support services. While demonstrating regional variability and certain sociodemographic characteristics, the inferential analyses were confined to bivariate comparisons, limiting control over the commonality among the studied variables. Multivariate analyses could make it possible to test more robust predictive models, but the sample limitations compromise the parameters for such analyses (Field, 2009).

Additionally, the sample comprises participants with internet access and electronic devices, rendering it more specific and posing a challenge in reaching individuals lacking technological tools. However, this limitation is inherent to the population of users from the online service from which the sample was drawn. Regarding the issue of the observed low response rate in this study, it aligns with the expected reality in online research and has been acknowledged in the literature for decades (Galea & Tracy, 2007). Despite this, such a strategy allows for the potential recruitment of

respondents from various locations at a low cost (Faleiros et al., 2016), along with the expeditious tabulation of results. Thus, online questionnaires are widely adopted, as was the case in this study.

Closely tied to this strategy is the challenge posed by the pandemic context, which made in-person questionnaire administration unfeasible, compounded by respondents residing in geographically distinct locations. Therefore, individuals lacking regular internet access or suitable electronic devices might not have responded to the questionnaire. Likely, these respondents represent a segment of individuals with disadvantaged living conditions or greater vulnerability (Andrades-Tobar et al., 2021), indirectly supported in this study by the higher proportion of participants with a family income above three minimum wages (26.3%) and whose income was maintained or increased after the pandemic (59.6%).

Another potential limitation is that estimates in this study did not employ specific screening instruments to assess symptoms of depression, anxiety, suicidal ideation, and alcohol consumption. Our questionnaire comprised self-report, survey-type questions, without the use of psychometric instruments based on any theoretical construct, with the primary outcomes composed of a single question. Therefore, measuring the validity of the questionnaire is not possible. However, the selection of a single, simplified self-perception questionnaire proved feasible due to a greater interest in exploring the relationship between feelings and general – non-diagnostic – states, along with some other variables of interest. Furthermore, it facilitated greater questionnaire conciseness and was conceived as a strategy to boost the number of potential participants by reducing the response time required for completion (Faleiros et al., 2016).

Finally, by collecting information from users originating from a single service, specifically those who agreed to participate and are individuals seeking help, there may have been a sampling bias. Conversely, the correlational and cross-sectional nature of the study itself anticipates the possibility and interest in investigating relationships between variables rather than generalizing results (Lau, 2017; Sousa et al., 2007). Moreover, the specificity of the studied population reinforces the uniqueness of the study. Additionally, the similarities in results found in other studies decrease the likelihood of participant recruitment bias and contribute to the convergence of evidence from various studies.

Conclusion

The COVID-19 pandemic has had a significant social and health impact on populations worldwide. This study demonstrated that, akin to other nations, in Brazil, this impact has exacerbated the challenges within an already unequal social context, leading to severe consequences for mental health. The associations found between alcohol consumption, feelings of anxiety or nervousness, depression or sadness, and certain social determinants in health underscore the importance of assessing the mental health impacts on the population during and after the pandemic, considering the psychological consequences reported by participants.

Another noteworthy factor was the reach of online care modalities, as exemplified by the service that facilitated participant recruitment for this study. Having access to immediate health support when seeking help is extremely important for a population experiencing intense suffering and social isolation. In a country of continental proportions like Brazil, amid a global crisis where access to in-person health services is limited, receiving initial care support with the option to seek further assistance when needed holds significant potential.

This study emphasizes the importance of further exploring studies on social determinants of mental health related to moments of health or social crises, extending beyond the COVID-19 pandemic. As expressed by several cited authors, the consequences of the pandemic should not be limited to that period and be considered as being in the past. On the contrary, these studies, investigations, and experiences should be used to understand the present repercussions/impacts this relationship had in each context, contributing to the creation and/or strengthening of online, in-person, or hybrid strategies, especially for unequal contexts. This aims to alleviate the impact that occurred, promoting mental health spaces within existing or new public policies and services.

In light of the above, the results obtained through the present study corroborate the widely disseminated and previously cited information regarding the global increase in cases of anxiety and depression as health conditions significantly aggravated during the pandemic. The experience of a global crisis has brought attention to this critical aspect of health, marked by an increased demand for emergency care, exposing the vulnerability of services and underscoring the necessity to tackle the worldwide shortage of resources for mental health support. The heightened challenges in the population's health during the pandemic reinforce the urgency of maintaining and strengthening essential health services in the country. In particular, mental health services and psychosocial support in response to post-pandemic effects on the affected population and for future public health emergencies. Thus, this study emphasizes the importance of supporting the consolidation and updating of public policies in the country to address the population's needs in crisis situations, with a greater focus on mental health.

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