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ORIGINAL ARTICLE

Mental health in the second wave of the Coronavirus Disease 2019 pandemic in Brazil*

Saúde mental na segunda onda da pandemia de Coronavirus Disease 2019 no Brasil

Salud mental en la segunda ola de la pandemia de Coronavirus Disease 2019 en Brasil

Ramos, Mozer de Miranda;[1] Cerqueira-Santos, Elder;[2] Machado, Rodrigo de Oliveira[3]

ABSTRACT

Objective: to identify predictors of distress and fatigue in Brazilians during the second wave of Coronavirus Disease 2019 (Covid-19), examining identity and political markers. **Method**: an online survey was conducted with 1.328 Brazilian respondents, using a socio-identity questionnaire, questionnaires regarding the psychosocial effects of the pandemic and standardized scales to evaluate distress, fatigue, authoritarianism, and conservatism. **Results**: significant differences were observed (using ANOVA and t-tests) in mental health regarding sexual orientation, gender, ethnic-racial identification, political orientation, authoritarianism, conservatism, importance given to religiosity, and hometown size. Linear regressions illustrated that problems associated with the pandemic, like drug use and weight issues, play a significant role in mental health, alongside emotional effects caused by the pandemic. **Conclusions**: The problems associated with the pandemic, emotional effect, and political-identity markers are fundamental to understanding and acting upon the mental health of the population in this context. **Descriptors**: Mental Health; Covid-19; Psychological Distress; Fatigue; Coronavirus

RESUMO

***Objetivo**: identificar preditores de distress e fadiga em brasileiros na segunda onda de Coronavirus Disease 2019 (Covid-19), observando marcadores político-identitários. **Método**: foi realizado um survey online com 1.328 respondentes brasileiros, com questionário socio-identitário, questionários sobre efeitos psicossociais da pandemia e escalas padronizadas para avaliar distress, fadiga, autoritarismo e conservadorismo. **Resultados**: foram encontradas diferenças significativas (através de ANOVA e testes t) acerca da saúde mental com relação a orientação sexual, gênero, identificação étnico-racial, orientação política, autoritarismo, conservadorismo, importância dada à religiosidade*

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1 University Federal of Sergipe (UFS). Aracaju, Sergipe (SE). E-mail: mozeramos@gmail.com.br ORCID: 0000-0001-5164-1543
2 University Federal of Sergipe (UFS). Aracaju, Sergipe (SE). E-mail: eldercerqueira@gmail.com ORCID: 0000-0003-1116-6391
3 University Federal of Sergipe (UFS). Aracaju, Sergipe (SE). E-mail: rodrigomachado.psicologia@gmail.com ORCID: 0000-0001-8098-692X

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e tamanho da cidade de moradia. As regressões lineares realizadas destacaram que os problemas associados a pandemia, como uso de substâncias psicoativas e problemas com o peso, desempenham papel importante para saúde mental, juntamente com a afetação emocional provocada pela pandemia. ***Conclusões****: os problemas associados à pandemia, a afetação emocional e os marcadores político-identitários são fundamentais para a compreensão e atuação acerca da saúde mental da população nesse contexto.*
Descritores*: Saúde mental; Covid-19; Sofrimento psicológico; Fadiga; Coronavirus*

RESUMEN

Objetivo*: identificar los predictores de distress y fadiga en los brasileños en la segunda onda de Coronavirus Disease 2019 (Covid-19), observando marcadores político-identitarios.* ***Método****: se realizó una investigación online con 1.328 participantes brasileños, con cuestionario socio-identitario y sobre efectos psicosociales de la pandemia y escalas estandarizadas para evaluar distress, fatiga, autoritarismo y conservadurismo.* ***Resultados****: se encontraron diferencias significativas (mediante ANOVA y t-tests) sobre salud mental en relación con orientación sexual, género, identificación étnico-racial, orientación política, autoritarismo, conservadurismo, importancia dada a la religiosidad y tamaño de la ciudad de residencia. Las regresiones lineales realizadas destacaron que problemas asociados a la pandemia, como consumo de sustancias psicoactivas y problemas de peso, desempeñan un papel importante para la salud mental, junto con la afectación emocional pandémica.* ***Conclusiones****: los problemas asociados a la pandemia, el efecto emocional y los marcadores político-identitarios son fundamentales para entender y actuar sobre la salud mental de la población.*
Descriptores*: Salud Mental; Covid-19; Distrés Psicológico; Fatiga; Coronavirus*

INTRODUCTION

The Coronavirus Disease 2019 (Covid-19) pandemic has been greatly affecting the world in the two years following the first Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection. In addition to the millions of deaths caused by the disease, the pandemic has led to severe economic, social, and psychological issues. Mental health is a major concern in this period, as fear of contamination, social changes, social isolation, uncertainty induced by swift changes in news broadcasting and health recommendations, mourning over deceased persons, and other stressors have interfered with the population's psychological well-being.[1-5] These elements might be related to the development or exacerbation of psychological distress, either associated with psychiatric disorders or not.

In Brazil, the figure of speech "we are all in the same boat" was frequently used to convey that the whole population would suffer the consequences of Covid-19. However, this metaphor was highly challenged[6-9] since different social and economic statuses, as well as particular social identities, can shape the experience of such an atypical period, bound to cause psychological distress. These markers may constitute risk or protective factors to individuals. As an objective example, the glaring social inequality in Brazil induced many to show up for work even through the most challenging periods of the pandemic, with no public or private support. They faced severe limitations in accessing

water and hygiene products, for instance; meanwhile, another share of the population was able to outsource their daily activities in order to protect themselves from the virus and/or work from home.[9-12]

Throughout the first wave of Covid-19 in Brazil, numerous studies have sought to understand the psychosocial effects of the pandemic and to identify predictors of psychological distress in this period.[3,13-18] These studies revealed that some social markers could interfere with mental health during the pandemic. These findings can guide health professionals in their interventions and add to their understanding of the process of becoming ill during the pandemic. Another critical aspect of these investigations is to expose alarming inequities among different groups (e.g. gender and social class) and contribute to overcoming them.

Gender differences in mental health are consistently displayed in the literature, indicating that women tend to have worse outcomes.[19-22] Research in Brazil during the pandemic has come across the same tendency.[14-15,17-18] Furthermore, sexism in Brazilian society imposed even more intense routines for women during the pandemic, through the accumulation of domestic responsibilities, family obligations, and work, as a result of schools and daycare centers closing down, and working from home.[23-25]

Similarly, arguments were raised to direct attention to other social minorities, such as sexual and gender minorities,[15,26-27] as well as non-white individuals,[28-30] although these investigations were not as systematic, especially in Brazil. A plethora of other factors can impact mental health in the population, such as religiosity,[31-32] political identity,[33-34] and geographic and economic context.[14,35-36] However, research on mental health during the first wave of Covid-19 in Brazil has dedicated little attention to these topics.

In light of this reasoning, the present study aimed to identify predictors of distress (considered to be a wider negative indicator of mental health or a measure of general psychological distress, it is that includes symptoms and uncomfortable affective states, like anxiety, anguish, affliction, sadness, depression, and stress)[15] and fatigue in Brazilians in the second wave of Covid-19 (beginning of 2021), watching for political and identity markers (gender, sexual orientation, ethnic-racial identity, authoritarianism, conservatism, political orientation, size of hometown, and importance given to religiosity). Understanding how political orientation, identity, and social markers can influence psychological distress in the pandemic is crucial for mental health workers and their interventions, as it allows them to de-individualize how mental illness is treated. In addition, updating data as the pandemic progresses is important for keeping perspectives of this health emergency current.

METHOD

This transversal quantitative investigation was carried out through a survey on an online platform (QuestionPro). The study was approved by the National Commission of Research Ethics (30192720.0.0000.5546). The anonymity of the participants was

guaranteed and only those who agreed with the informed consent form could answer the questionnaire.

The sample selection was non-probabilistic, and for convenience, only admitted participants who both agreed to participate and also met the inclusion criteria: were over 18 years old, lived in Brazil, and agreed to the research terms. There were a total of 1,328 individual participants. There were a total of 1,328 individual participants. Mean age was 27.5 years (SD = 8.64), ranging from 18 to 71 years. Participants from five Brazilian states comprised 72,1% of the sample: Minas Gerais (20,4%), Rio Grande do Sul (19,1%), Bahia (13,7%), São Paulo (10.4%), and Rio de Janeiro (8,6%). Other 20 states (including the Federal District of Brazil) are also represented in the sample.

A social and identity questionnaire was used to provide data such as age and sexual orientation. A questionnaire to assess psychosocial effects of the Covid-19 pandemic was also employed.[37] This instrument contains a Likert scale, ranging from 0 (not emotionally affected) to 10 (extremely emotionally affected) and items like "In the last 3 weeks, how much did the Covid-19 pandemic affect you emotionally (i.e. making you angry, frightened, disturbed, or depressed)?". The exemplified item comprises the measure of "Emotional Affectation" used in the study. Other instruments were: *Depression, Anxiety and Stress Scales 21-Item Version* (DASS-21[38]), with 21 items on a four-point Likert scale, α = 0,952, to evaluate distress; *Fatigue Assessment Scale* (FAS[39]), with 10 items on a five-point Likert scale, α = 0,905, to assess fatigue; Right-Wing Authoritarianism scale (RWA[40]), from which only 20 items were employed (on a five-point Likert scale) corresponding to Authoritarianism (α = 0,888) and Traditionalism (α = 0,839) factors, to assess authoritarianism and conservatism of customs, respectively. Such scales are validated in Brazil, with the exception of the FAS, which was adapted to the Portuguese context and does not have a publication referring to Brazil yet. However, the structure and consistency of the items in Brazil has been verified.

Instruments were presented in an online research form that was available between January 27th and March 16th, 2021. Participants spent an average of 20 minutes to respond. Invitation to the form was publicized on social media (*Instagram, Facebook, WhatsApp*) and via universities' institutional e-mails from all regions found online on their websites. After collection, data was organized and analyzed with statistical software (JASP).

The sample was divided into two groups (high and low scores) according to the median of authoritarianism scores. The same procedure was done with the conservatism scale, also resulting in two contrasting groups. Problems caused by the Covid-19 pandemic (increased consumption of alcohol, tobacco, or other substances; issues of mental health and well-being; and difficulties maintaining physical fitness – losing or gaining weight) were grouped in an indicator of Problems Associated with the Covid-19 Pandemic (PACP). Descriptive statistics were produced, and inferential tests were conducted.

Mean difference tests (t-test and ANOVA) were used to determine

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differences in distress, fatigue, PACP, and emotional effects caused by the pandemic in groups divided by gender, sexual orientation, ethnic-racial identification, hometown size, political orientation, authoritarianism, conservatism, and importance given to religiosity. Chi-squared tests evaluated the independence between political orientation and authoritarianism and conservatism. Also, multiple linear regressions were conducted to predict two main mental health measures (fatigue and distress) based on the independent variables that were used in the mean difference tests and including the variable age.

RESULTS

Participants

Part of the sample characterization is presented in Table 1. Female gender comprised 62,2% (*n* = 826) of the sample, whereas male gender corresponded to 35,5% (*n* = 472). Other identifications amounted to 2,3% (*n* = 30). Only 1,3% (*n* = 17) declared as transgender, while cisgenders were 98,0% (*n* = 1301). Heterosexuality was predominant (66,3%; *n* = 880), followed by bisexuality (17,0%; *n* = 226) and homosexuality (12,5%; *n* = 166). Other sexual orientations accounted for 4,2% (*n* = 56).

Table 1: Participants' profile Brazilians on mental health in the Covid-19 pandemic. Brazil, 2021. (*N* = 1,328)

Características	Grupos	Frequency (*n*)	Percentage (%)
Tipe of hometown	State capital	561	42,2
	>500.000 inhab.	184	13,9
	100.000-500.000 inhab.	299	22,5
	50.000-100.000 inhab.	115	8,7
	<50.000 inhab.	169	12,7
Schooling (completed)	Elementary School	9	0,7
	High School	643	48,4
	University Education	302	22,7
	Post-Graduate	374	28,2
Professional activity	Student	686	51,7
	Student and employed	392	29,5
	Employed	183	13,8
	Unemployed	53	4,0
	Others	14	1,0
Importance of religiosity	Unimportant	287	21,6
	Almost unimportant	129	9,7
	A little important	250	18,8
	Important	370	27,9
	Very important	143	10,8
	Extremely important	149	11,2
Political orientation	Left-wing	831	62,6
	Center	385	29,0
	Right-wing	112	8,4

Source: survey data, 2021.

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Most participants identified as white (63,3%; *n* = 841) and black (34,6%; *n* = 459). Black individuals identified as having either black skin (9,1%; *n* = 121) or brown skin (25,5%; *n* = 338). Other identifications accounted for 2.1% (*n* = 28). In relation to place of residence, 95,0% of the sample (*n* = 1268) live in the urban area.

Regarding authoritarianism, the mean score for the group with low scores was 1.77 (*SD* = 0.38), and the mean score for the group with high scores was 3.23 (*SD* = 0.60). As to conservatism, mean score for the first group was 1.28 (*SD* = 0.18) and 2.29 (*SD* = 0.65) for the second group. These distributions range between 1-5, and mean values greater than two are indicative of these traits. Such groups were divided from the median, to create illustrative groups of greater and lesser authoritarianism and conservatism.

Covid-19

Less than half of the participants reported that they were effectively complying with the social isolation recommendations (49,2%; *n* = 653), while another share of participants was partially complying (41,9%; *n* = 557) and only 8,9% (*n* = 118) declared they were not complying with recommendations. Table 2 presents data on the psychosocial impacts of the pandemic.

Tabela 2: Averages and agreement on the impacts of social isolation and Covid-19. Brazil, 2021. (N = 1.328)

		Frequency in percent (%)					
Variables	**Average (*SD*)**	**Zero**	**1-2**	**3-4**	**5-6**	**7-8**	**9-10**
In the last 3 weeks, how much has the Covid-19 pandemic affected your life?	6,75 (2,67)	5,1	3,4	7,9	21,5	35,8	26,3
In the last 3 weeks, how limited do you feel about carrying out normal life activities due to the Covid-19 pandemic?	7,22 (2,54)	3,5	3,1	6,9	18,2	35,7	33,7
In the last 3 weeks, how much did the covid-19 pandemic affect you emotionally?	6,99 (2,88)	4,7	6,2	7,4	16,1	29,4	36,3
In the last 3 weeks, how afraid are you of being infected with the new coronavirus?	7,30 (2,92)	5,3	4,2	6,4	15,3	24,3	44,3
In the last 3 weeks, how well do you think you are informed about the covid-19 pandemic?	7,66 (1,92)	0,4%	0,9%	4,9%	17,8 %	40,7%	35,4%

Note: The numbers from zero to ten represent the intensity of the participants' responses in accordance with the questions described.
Source: survey data, 2021.

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Participants were also questioned about three problematic scenarios that could stem from the Covid-19 pandemic: increased consumption of alcohol, tobacco, or other substances; issues of mental health and well-being; and difficulties maintaining physical fitness (losing or gaining weight). Increased drug use was labeled as a problem by 39,7% (n = 393) of respondents. In this period, mental health was a problem for 87,0% (n = 1,112) and maintaining physical fitness was a problem for 84.4% (n = 1,100).

Mental Health

Mental health measures (distress, fatigue, PACP, and emotional effect of the pandemic) were compared between bivariate groups (gender, ethnical-racial identification, authoritarianism, and conservatism) and among multivariate groups (sexual orientation, size of hometown, political orientation, and importance given to religiosity). The comparisons between bivariate groups are shown in Table 3, and results for multivariate groups are displayed in Table 4.

Tabela 3: T test of the variables Distress, Fatigue, PAPC and Emotional affect in relation to gender, ethnic-racial identity, authoritarianism and conservatism. Brazil, 2021. (N = 1.328)

		Resultados							
		Distress		Fatigue		PAPC		Emotional effect	
Caracteristcs		*M(SD)*	*t (Cohen' s d)*	*M(SD)*	*t (Cohen' s d)*	*M(SD)*	*t (Cohen' s d)*	*M(SD)*	*t (Cohen' s d)*
Gender	Female	1,17 (0,72)	5,801[a] (0,33)	30,83 (9,01)	5,670[a] (0,33)	3,11 (1,08)	4,098[a] (0,24)	7,39 (2,62)	6,249[a] (0,38)
	Male	0,94 (0,66)		27,89 (8,86)		2,85 (1,11)		6,31 (3,18)	
Ethnic-racial id,	White	1,06 (0,69)	-2,565[c] (0,15)	29,36 (9,18)	-2,303[c] (0,13)	2,94 (1,09)	-3,098[b] (0,18)	6,91 (2,87)	-1,584
	Black	1,17 (0,74)		30,57 (8,79)		3,14 (1,09)		7,18 (2,88)	
Authoritarianism	Lower	1,16 (0,70)	3,303[b] (0,18)	30,79 (8,78)	4,180[a] (0,23)	3,12 (1,05)	3,725[a] (0,21)	7,30 (2,62)	4,049[a] (0,22)
	Higder	1,03 (0,72)		28,73 (9,23)		2,89 (1,14)		6,66 (3,08)	
Conservatism	Lower	1,19 (0,70)	4,943[a] (0,27)	31,05 (8,96)	5,346[a] (0,29)	3,16 (1,05)	5,173[a] (0,29)	7,23 (2,77)	3,324[b] (0,17)
	Higder	1,00 (0,70)		28,42 (8,96)		2,84 (1,12)		6,73 (2,98)	

a = p < 0,001; b = p < 0,01; c = p < 0,05
Source: survey data, 2021.

Significant differences on distress were observed between the following pairs: heterosexual and homosexual (p < 0.001; Cohen's d = 0.35); religiosity unimportant and religiosity very important (p = 0.021; Cohen's d = 0.24); religiosity a little important and religiosity very important (p = 0.022; Cohen's d = 0.22); left-wing and center (p = 0.004; Cohen's d = 0.20); left-wing and

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right-wing ($p < 0.001$; Cohen's $d = 0.46$); center and right-wing ($p = 0.044$; Cohen's $d = 0.26$). Fatigue was significantly different in the following pairs: heterosexuals and homosexuals ($p < 0.001$; Cohen's $d = 0.39$); heterosexuals and bisexuals ($p < 0.001$; Cohen's $d = 0.53$); state capital and city under 50,000 inhabitants ($p = 0.024$; Cohen's $d = 0.26$); religiosity unimportant and religiosity very important ($p < 0.001$; Cohen's $d = 0.42$); religiosity unimportant and religiosity important ($p = 0.002$; Cohen's $d = 0.28$); religiosity a little important and religiosity very important ($p = 0.003$; Cohen's $d = 0.28$); left-wing and center ($p < 0.001$; Cohen's $d = 0.27$), left-wing and right-wing ($p < 0.001$; Cohen's $d = 0.58$); center and right-wing ($p = 0.011$; Cohen's $d = 0.33$).

Table 4: ANOVA for the variables Distress, Fatigue, PACP, and Emotional Effect in relation to sexual orientation, hometown size, importance of religiosity, and political orientation. Brazil, 2021. ($N = 1.328$)

		Results							
		Distress		Fatigue		PAPC		Emotional effect	
Characteristics		*M(SD)*	*F* (η^2)	*M(SD)*	*F* (η^2)	*M(SD)*	*F* (η^2)	*M(SD)*	*F* (η^2)
Sexual orientation	HTS	0,99 (0,68)	26,845[a] (0,041)	28,34 (8,70)	31,151[a] (0,047)	2,91 (1,11)	10,717[a] (0,017)	6,73 (3,00)	1,422[a] (0,002)
	HMS	1,23 (0,69)		31,72 (8,72)		3,09 (1,06)		7,52 (2,57)	
	BIS	1,33 (0,71)		33,03 (9,10)		3,27 (1,00)		7,60 (2,50)	
Hometown size	State capital	1,10 (0,69)	0,722	30,38 (9,08)	3,463[b] (0,010)	3,04 (1,08)	3,758[b] (0,011)	7,09 (2,73)	1,329
	Over 500.000 inhab.	1,14 (0,79)		30,69 (9,63)		3,15 (1,06)		7,09 (2,97)	
	100.000-500.000 inhab.	1,11 (0,70)		29,72 (8,53)		3,05 (1,06)		6,95 (2,91)	
	50.000-100.000 inhab.	1,05 (0,69)		28,34 (8,95)		2,90 (1,16)		7,16 (2,84)	
	Under 50.000 inhab.	1,03 (0,72)		28,00 (9,03)		2,74 (1,17)		6,54 (3,23)	
Importância of religiosity	Unimportant	1,15 (0,65)	3,600[c] (0,008)	31,69 (8,89)	9,746[a] (0,022)	3,07 (1,13)	0,053[c] (0,007)	6,84 (2,98)	1,316
	Almost unimportant	1,15 (0,73)		30,39 (8,87)		3,12 (1,03)		7,21 (2,78)	
	A little important	1,09 (0,72)		29,22 (8,83)		2,92 (1,08)		7,02 (2,85)	
	Important	0,98 (0,72)		27,88 (9,33)		2,91 (1,17)		6,83 (2,96)	
Political orientation	Left-wing	1,16 (0,70)	13,224[a] (0,020)	30,94 (9,04)	22,853[a] (0,033)	3,13 (1,05)	16,584[a] (0,025)	7,31 (2,67)	19,356[a] (0,028)
	Center	1,02 (0,70)		28,51 (8,54)		2,88 (1,16)		6,70 (3,06)	
	Right-wing	0,84 (0,71)		25,67 (9,20)		2,56 (1,11)		5,66 (3,30)	

a = $p < 0,001$; b = $p < 0,01$; c = $p < 0,05$
HMS = homosexual / HTS = heterosexual / BIS = bisexual
Source: survey data, 2021.

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Significant differences in PACP were noted between the following pairs: heterosexuals and bisexuals (p < 0.001; Cohen's d = 0.33), state capital and city under 50,000 inhabitants (p = 0.030; Cohen's d = 0.26); city with more than 500,000 inhabitants and city with less than 50,000 inhabitants (p = 0.007; Cohen's d = 0.37); city between 100,000 – 500,000 inhabitants and city with less than 50,000 inhabitants (p = 0.042; Cohen's d = 0.28); left-wing and center (p = 0.001; Cohen's d = 0.23); left-wing and right-wing (p < 0.001; Cohen's d = 0.53); center and right-wing (p = 0.032; Cohen's d = 0.27). Scores for the emotional effect of the pandemic were significantly different between the pairs: heterosexuals and homosexuals (p = 0.001; Cohen's d = 0.27); heterosexuals and bisexuals (p < 0.001; Cohen's d = 0.30); left-wing and center (p = 0.003; Cohen's d = 0.22); left-wing and right-wing (p < 0.001; Cohen's d = 0.60); center and right-wing (p = 0.009; Cohen's d = 0.33).

Political orientation was associated to authoritarianism (χ^2 (2) = 259,918; p < 0,001; V = 0,440) and conservatism (χ^2 (2) = 136,793; p < 0,001; V = 0,321). Analysis of adjusted standardized residuals revealed an association between left-wing and lower authoritarianism and conservatism, whereas center and right-wing were associated with groups with increased authoritarianism and conservatism.

Finally, multiple linear regressions were conducted, using backward variable selection, with distress and fatigue as dependent variables. PACP and emotional effects were used as independent variables in the analyses. Resulting models were significant for both distress [F(6, 1255) = 188.744; p < 0.001; R = 0.689; $R^2_{adjusted}$ = 0.472], and fatigue [F(6, 1239) = 129.806; p < 0.001; R = 0.621; $R^2_{adjusted}$ = 0.383]. Table 5 presents the dependent variables that remained in the model.

Table 5: Multiple linear regression for Distress and Fatigue. Brazil, 2021. (N = 1,328)

Dependent variable	Independent variables	*B*	*Std. Error*	*β*	*t*	*p*
Distress	PAPC	0,244	0,015	0,379	16,418	< 0,001
	Emotional effect	0,094	0,006	0,382	16,498	< 0,001
	Sexual orientation	0,073	0,020	0,081	3,716	< 0,001
	Age	-0,006	0,002	-0,068	-3,207	0,001
	Conservatism	-0,046	0,022	-0,044	-2,047	0,041
	Tipe of hometown	0,019	0,010	0,038	1,810	0,070
Fatigue	PAPC	3,305	0,205	0,405	16,124	< 0,001
	Emotional effect	0,729	0,079	0,243	9,196	< 0,001
	Age	-0,088	0,024	-0,086	-3,720	< 0,001
	Sexual orientation	0,963	0,275	0,083	3,504	< 0,001
	Importance of religiosity	-0,482	0,133	-0,086	-3,622	< 0,001
	Gender	-1,281	0,428	-0,069	-2,997	0,003

Source: survey data, 2021.

In summary, the linear regressions conducted indicate that increased levels of distress in the sample may be partially explained by (in decreasing order of contribution): more PACP, emotional effects caused by the pandemic, belonging to a sexual minority, younger age, and lower conservatism (and possibly, living in small cities, which was considered in the model, although non-significant, and thus discarded from the interpretations of this article). Similarly, increased fatigue could be partially explained by (in decreasing order of contribution): more PACP, emotional effects caused by the pandemic, lower age, belonging to a sexual minority, lower importance given to religiosity, and female gender.

DISCUSSION

Interpretation of these results must take into consideration the context in which data was gathered. From late January until mid-March 2021, Brazil entered a new cycle in the pandemic, which was interpreted as a "second wave" of Covid-19. Soon after data collection was completed, the country descended into a period of mortality and transmission rate without any precedent. Despite the steep increase in deaths and new cases, the population seemed less sensitive or fearful of the pandemic and its effects. Social isolation rates were diminished compared to the year prior, as more than half of the participants of this study reported that they did not follow social isolation recommendations consistently or did not follow them at all. In the first half of 2020, a similar inquiry found that only around 21% of respondents reported that same attitude.[15] The press further documented and reported the drop in social isolation.[41-42]

Nonetheless, respondents revealed that the pandemic had an expressive and adverse effect on their life, displaying substantial fear of contagion and intense perception of emotional effects. One alarming indicator was the onset of problems associated with the pandemic experience (PACP), which impacted physical fitness, mental health, and drug use. These issues were fairly common among participants of this study, indicating a pressing public health issue parallel to the Covid-19 pandemic. This context could be described as paradoxical. While the pandemic endured with severe repercussions (e.g. mortality, negative mental health outcomes, weight gain), precautions (e.g. social isolation, mask-wearing, businesses and organizations shutting down) had diminished. Despite seeming contradictory, these events and attitudes may reinforce one another. A prolonged period of safety recommendations to prevent the virus from spreading may undermine willingness to adhere to such recommendations. Events otherwise seen as exceptional become commonplace, promoting a sort of moral relativism towards compliance with health guidelines.[43] Various factors have contributed to this scenario: the federal government showed little effort to promote social distancing and mask-wearing; the public engaged in behaviors disseminated by fake news sources (e.g. taking medications such as hydroxychloroquine and ivermectin); government-funded financial assistance to the population ceased; and vaccine purchases were involved in controversy.[44]

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Social minorities presented significant increases in negative health indicators in comparison with their majoritarian counterparts. Distress, fatigue, and emotional effects were increased in homosexuals and bisexuals when compared with heterosexuals. Bisexuals also exhibited more PACP than heterosexuals. Female participants displayed more distress, fatigue, PACP, and emotional effects than males. The same was observed in black participants when compared to white respondents, except for emotional effects. In summary, these results corroborate hypotheses formulated early in the pandemic, which indicated an increased risk for vulnerable populations.[27,45] Minority Stress Theory (MST) posits that the continued experience of specific stressors directed to individuals of a social minority can negatively affect their health.[46-47] Therefore, exceptional situations (such as the Covid-19 pandemic) may intensify specific stressors. For gender and sexual minorities, social rejection and the experience of prejudice can hamper their access to healthcare and perpetuate their exposure to stressful contexts (e.g. conflicted home[27,37,48]).

In agreement with other studies (e. g.[31]), greater importance given to religiosity was related to decreased distress and fatigue. Religiosity is proposed as a protective factor for mental health,[49] as it favors a more comfortable and hopeful interpretation of stressful events. Nevertheless, this influence may depend on a favorable cultural context, as demonstrated by a study on Christian minorities in Pakistan, which indicates a positive relationship between perceived stress and religiosity.[50] Citizens of large towns, such as state capitals or cities with more than 100,000 inhabitants, reported more PACP than those who lived in cities under 50,000 inhabitants. Further, state capitals stand out with elevated fatigue levels. In that sense, large urban centers might not promote a healthy lifestyle, making citizens more susceptible to impairments in the Covid-19 pandemic, with repercussions on fatigue or physical fitness. Although the effects of urbanity depend on contextual and geographical aspects, negative influences of urbanity on mental health are acknowledged in the literature.[51-52]

Groups divided by political orientation were significantly different in all measures assessed. Left-wing participants showed increased distress, fatigue, emotional effects, and PACP. Similarly, individuals with low authoritarianism and low conservatism also had significantly greater scores on these measures. These results overlap since political orientation was significantly associated with both authoritarianism and conservatism. The "left-wing" group was associated with less authoritarianism and conservatism, whereas the groups labeled as "center" and "right-wing" were associated with groups high in authoritarianism and conservatism.

Present findings seem consistent with previous studies, in which right-wing authoritarianism (which comprises authoritarianism and conservatism) was associated with better mental health outcomes.[33-34] A plausible explanation is that authoritarianism serves as a buffer against death anxiety and mental distress through systems of justification.[34]

Authoritarianism and political conservatism could be related to personality traits associated with resistance to change, avoidance of unstable scenarios, dogmatism, need for control, among others.[53] Thus, denial of systemic social change caused by the virus, reduced participation in novel conduct guidelines, and acceptance of false interpretations of reality might be less costly in cognitive terms.

A study demonstrated that authoritarianism predicted a lack of concern about health impacts of the virus, reduced likelihood of wearing a mask, lower importance given to scientists' advice, and a stronger belief that China was responsible for Covid-19.[54] Aside from this, evidence suggests that political conservatism is negatively associated with the endorsement of mandatory vaccination and precautionary measures.[55] Hence, the relationship between political attitudes (conservatism, authoritarianism, and right-wing orientation) and better mental health outcomes may stem from a diminished concern about Covid-19 and a decreased commitment to measures to control the pandemic. Moreover, conservatism and right-wing partisanship predicted refusal to engage in health behaviors to combat the pandemic worldwide.[56-59]

There are contextual elements that require attention, such as the political scenario where the pandemic occurs. The Brazilian government was led by an authoritarian and aggressive figure, who made frequent threats against democratic institutions, fostering a climate of apprehension that could interfere with mental health – especially in the case of individuals who did not support the ongoing policies and trends. These critics were in an adverse environment, as fake news was frequently broadcasted, treatments with no efficacy were put forth, growing death numbers were treated with carelessness, and universal vaccination was uncertain.[44,60-62] Moreover, there is an incentive to adopt authoritarian and conservative values systems during pathogenic threats, such as with Covid-19.[63]

Coincident variables predicted distress and fatigue: more PACP, increased emotional effect, younger age, and belonging to a sexual minority. Models for those two dependent variables were slightly different: lesser conservatism was kept in the model for distress, while less importance given to religiosity and female gender were significant for fatigue.

The experience of more PACP (through impacts on physical fitness, mental health, or drug use) reveals associations consistent with the available literature (e. g.[18,64-67]), which indicates that indirect effects of the pandemic are associated with psychological distress. This association is also present in the dimension of emotional effect as an important predictor in those models.

Being young and belonging to a sexual minority is a combination consistently examined by MST.[46-47] There is, in fact, a longitudinal study that highlights the persistence of the effects of minority stressors on the mental health of young people.[68] The enduring effects of these stressors push for questioning how permanent the effects of the Covid-19 pandemic will be.

Limitations of this study include its exploratory design, which will require further investigation and confirmation of its findings to generalize results. Also, this research was unable to investigate potential particularities associated with gender minorities due to sample insufficiency and to analyze the influence of socioeconomic status on the other variables. Online surveys have consistent limitations in reaching individuals with lower education levels and in greater vulnerability. Groups divided by political orientation were different in size, and although this did not hinder statistical analyses, more similar group sizes would be preferable. Future studies should address the impact of fake news in order to advance present findings on authoritarianism and mental health during the Covid-19 pandemic.

CONCLUSIONS

The year 2021 in Brazil was notable for its extensive death toll and infection rate, followed by slow and complicated progress in the vaccination program. Public policy and mental health workers should be conscious of the unraveling of these effects in order to assist the population in overcoming the traumatic events of recent years. After all, mental health deterioration will be an invisible legacy of this period, in contrast with the more tangible damage caused by Covid-19 on physical health and human life loss.

The main objective of this investigation was successful, making it possible to identify predictors of distress and fatigue during the second wave of Covid-19 in Brazil. Although the study was not conclusive, it indicated that the experience of Covid-19 pandemic (PAPC) related problems and the emotional affectation caused by the pandemic were the primary predictors identified for distress and fatigue. Political-identity markers did not significantly influence the prediction of these variables but were associated with several significant group differences and with important effect sizes. This showed that gender, sexual orientation, ethnic-racial identification, political orientation, conservatism, authoritarianism, and even the importance given to religiosity and the type of city of residence are relevant elements for the collective analysis of mental health of Brazilians and should be considered when designing strategies and intervening in mental health.

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