



# Comparison of Climacteric Symptoms, Quality of Life, and Self-Care Attitudes before and during the COVID-19 Pandemic

Camila Oliveira Serra<sup>1</sup>, Paula Mara Gomes Leite<sup>1</sup>, Andréa Beatriz Bezerra<sup>3</sup>, Laura Freitas<sup>3,4</sup>, Lucas Veras<sup>3,4</sup>, Marcela Deda Costa<sup>5</sup>, Leila Luiza Conceição Gonçalves<sup>2</sup>, Leonardo Yung dos Santos Maciel<sup>1,3,5</sup>

<sup>1</sup>Postgraduate Nursing Program, Federal University of Sergipe, Aracaju, Brazil, <sup>2</sup>Department of Nursing, Federal University of Sergipe, Aracaju, Brazil, <sup>3</sup>Research Centre in Physical Activity, Health and Leisure (CIAFEL), Faculty of Sport, University of Porto, Porto, Portugal, <sup>4</sup>Laboratory for Integrative and Translational Research in Population Health (ITR), Porto, Portugal, <sup>5</sup>Department of Physical Therapy, Federal University of Sergipe, Lagarto, Brazil

**Objectives:** This study aimed to compare the climacteric symptoms, quality of life indices, and self-care attitudes in women before and during the coronavirus disease 2019 (COVID-19) pandemic.

**Methods:** This cross-sectional study was conducted between January 2020 and September 2021. The sample consisted of 342 climacteric women who were divided into two groups: before the pandemic (BP group; n = 62) and during the pandemic (DP group; n = 280). The Menopause Rating Scale and Women's Health Questionnaire were used to measure the health-related quality of life and degree of climacteric symptoms reported by women.

**Results:** During the COVID-19 pandemic, women were able to decrease their somatic symptoms derived from the climacteric period (BP group:  $7.84 \pm 4.46$ , DP group:  $5.94 \pm 9.20$ ;  $P = 0.003$ ).

**Conclusions:** There was no worsening in the self-reported symptoms, quality of life, and self-care attitudes of climacteric women because of the COVID-19 pandemic. Moreover, only somatic symptoms decreased during the pandemic.

**Key Words:** Climacteric, COVID-19 pandemic, Menopause, Self-care

## INTRODUCTION

During the coronavirus disease 2019 (COVID-19) pandemic, social inequality was exacerbated, affecting populations that need frequent monitoring, especially with regard to access to health services. In this sense, one of the major concerns that the pandemic reinforced was the quality of care provided to women, especially those who are experiencing climacteric [1-3].

The term climacteric comes from the Greek *Klimater* and is characterized as a period of transition between the reproductive and non-reproductive phases of a woman's life, a study showed that women with climac-

teric symptoms such as hot flashes, irritability and night sweats, had these symptoms moderately in half of the sample, while 20% to 30% classified them as severe [4]. Moreover, in this period surrounded by hormonal changes, the female quality of life can be negatively affected, which predicts, many times, an increase in self-care actions, such as the search for medical follow-up and the use of herbal medicines to relieve the climacteric symptoms [5].

Despite being a physiological process, the climacteric symptoms can be influenced by social, cultural, and economic factors in which the woman is subjected [3,6]. In general, there is a negative perception associ-

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Address for Correspondence: Leonardo Yung dos Santos Maciel, Department of Physical Therapy, Federal University of Sergipe, Rua Cláudio Batista, s/n, Cidade Nova, Aracaju, SE 49060-108, Brazil

Tel: 55-79- 3211-9196, E-mail: yung\_maciel@hotmail.com, ORCID: <https://orcid.org/0000-0001-5381-8015>

ated with climacteric about a conception of loss and aging, and this happens due to the social and cultural stereotype inherited from the biomedical model [7]. In that regard, a study reported that Brazilian women perceived the climacteric as a negative stage of life, associated with body aging, manifestations of emotional imbalance and symptoms that negatively affect their quality of life [6]. Therefore, specific interventions that minimize the impacts brought by this period of life are required.

Thus, given the adverse impact of pandemic on health care system, namely in women health assistance, and the possible positive effects of self-care actions in the quality of life of climacteric women, the aim of this study was to analyze the climacteric symptoms, the quality of life indices, and the self-care attitudes and compare before and during the COVID-19 pandemic.

## MATERIALS AND METHODS

### Type of study

This is a cross-sectional study, carried out between January 2020 and September 2021.

### Ethical aspects

The study complied with Resolution No. 466/2012 and was submitted to the Research Ethics Committee from the Federal University of Sergipe (CEP/UFS), via Plataforma Brasil, and was approved with registration 16299419.7.0000.5546 and under opinion: 4.023.073. For the participation in current investigation, the sample had to present the inclusion criteria, as well the consent for the research confirmed by the Free and Informed Term (TCLE). Data will be archived for ten years under the responsibility of the main researcher.

### Participants

Data collection occurred into two evaluation moments, forming two groups for analysis: (i) before the pandemic (BP) group, composed of 62 women who underwent face-to-face interviews at the Fernando Sampaio, Dona Jovem, Antônio Alves and Carlos Fernandes Basic Health Units and (ii) during the pandemic (DP) group, formed by 280 women of Brazilian nationality, residing in different regions of the country, who were invited to participate in the collection through an online form using Google Forms platform. The inclusion criteria included women between 40 and 65 years, with menstrual irregularity in the last 12 months or

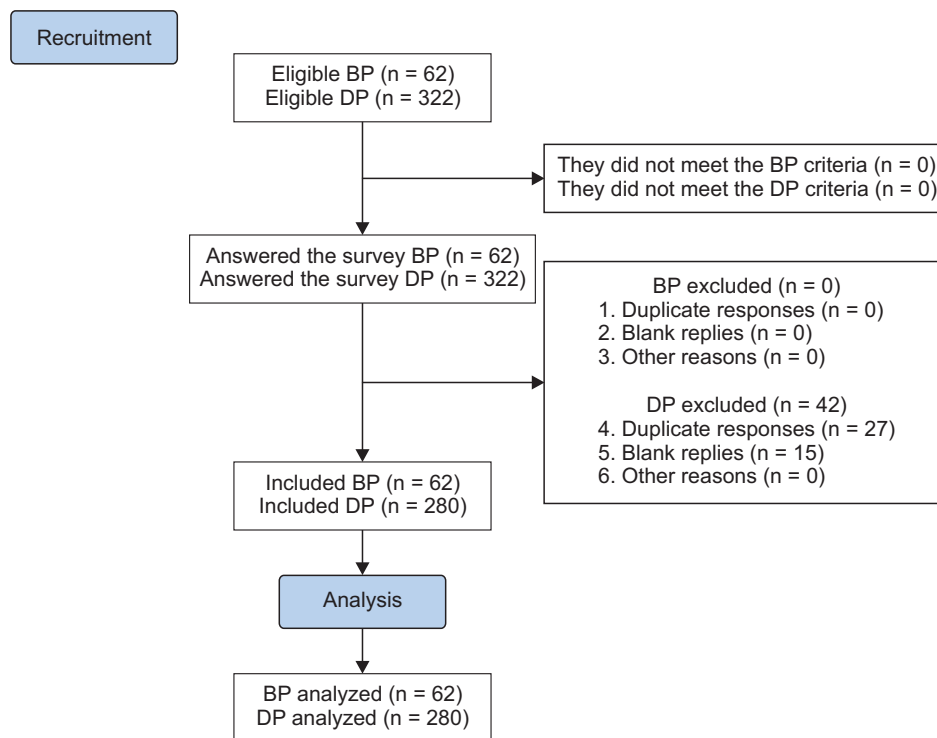
menstrual period twice in the last 12 months; suffer from any of the following symptoms—hot flashes (at least three episodes of hot flashes per day), diaphoresis, insomnia, migraine, irritability, vaginal dryness, and dyspareunia.

Exclusion criteria were the following: (i) incapability to answer the interview due to any reason, such as illness and incompatibility of schedules; (ii) lack of internet access and (iii) inability to use the means to access the research link. For the woman who was not included in the inclusion criteria or who did not accept to participate in the research, a thank you was issued and at this moment, the questionnaire was closed, or the interview ended. In the analysis of the DP group, the questionnaires were virtual, then the incomplete information and duplicate forms were removed. In cases where the participants answered the questionnaire more than once, the first answer was considered valid, if it was complete, as shown in [Figure 1](#).

### Data collection instruments

For the collection of sociodemographic and clinical data, a semi-structured interview script developed by the author was used, divided into three sections, covering information on: (i) age (at the time of the interview, in full years) and marital status (with or without a partner); (ii) education (as reported by the woman and according to the classification of the Critério Brasil 2019), and education level; and (iii) etnia/race (self-declared) defined as white, brown, black, yellow, or indigenous, and the clinical aspects described in the inclusion and exclusion criteria. Also, the Menopause Rating Scale (MRS) [8] and the Women's Health Questionnaire (WHQ) [9], in the translated and validated versions for Brazilian Portuguese, were applied to measure the health-related quality of life and the degree of climacteric symptoms reported by the woman. Both instruments are recommended and used in several studies with the same purposes as this study in order to establish consistent parameters for the analysis of results [9,10].

The MRS is addressed in eleven questions, related to climacteric symptoms and complaints, and composed in the following three domains of symptoms: (i) somato vegetative, such as shortness of breath, diaphoresis, hot flashes, heart discomfort, sleep disturbances, and muscle and joint issues; (ii) psychological, including depressive mood, irritability, anxiety, physical and mental exhaustion; and (iii) urinary tract symptoms,



**Fig. 1.** The flow diagram based in inclusion and exclusion criteria to recruit the climacteric women to investigate the climacteric symptoms, quality of life, and self-care attitudes before and during the COVID-19 pandemic. BP: before the pandemic, DP: during the pandemic.

such as bladder problems, sexual problems, and vaginal dryness. Each symptom is associated a severity score, ranging from zero to four points (0, absent; 1, mild; 2, moderate; 3, severe; 4, very severe). Consequently, the total MRS score is obtained by the total scores for each domain, being the higher, the more severe in terms of symptoms and the worse in quality of life. The maximum score is 44 points, and the general intensity of the referred climacteric symptomatology can be categorized according to the climacteric symptoms severity into: (i) absent or occasional (0–4 points); (ii) mild (5–8 points); (iii) moderate (9–16 points); or (iv) severe symptomatology ( $\geq 17$  points) [8].

The WHQ aims to assess nine domains related to physical and emotional health through 36 items of questions where the participants marked the symptom presented: (i) 1 (yes, definitely); (ii) 2 (yes, sometimes); (iii) 3 (no, rarely); and (iv) 4 (no, absolutely). In addition, the questions included an open form in which women who experienced symptoms could describe what they did to alleviate them. The questionnaire domains reflect a relatively independent symptom breakdown and are: (i) depressed mood; (ii) somatic symptoms; (iii) anxiety/fears; (iv) vasomotor symptoms; (v) sleep problems; (vi) sexual behavior; (vii) menstrual symptoms; (viii) memory/concentration; and (ix) the

“attractiveness” scale.

The memory/concentration subscale assesses the subjective memory and the sexual includes items related to vaginal dryness (causing sexual discomfort), sexual interest, and sexual satisfaction. Items concerning vaginal dryness and satisfaction were framed in the context of a current sexual relationship, then women who were not sexually active could skip and consequently omit the item. The WHQ is scored on a four-point scale (1 = yes, definitely; 2 = yes, sometimes; 3 = no, not much; 4 = no, no at all), these are reduced to binary options (0, no; 1, yes) and subscale items are divided and by the number of items in each domain. The highest score represents more suffering and dysfunction.

### Collection systematics

Data collection by the BP group took place from January to March 2020, while the world was already signaling the potential pandemic of COVID-19, all collection took place after approval of the Ethics Committee for Research with Human Beings of the Federal University of Sergipe (approval No. 4.023.073) and informed consent by the formulation was obtained from all patients, and recorded separately for each subject. The face-to-face interview was conducted at a UBS (basic health unit) in the city of Aracaju with the BP group

through the application of a semi-structured interview script, the MRS scales and the WHQ of the digital platforms. For DP group, the collection took place from June to September 2020, a link was generated through the Google Forms platform, and it was disclosed to all women using digital resources (Email, WhatsApp, Instagram, and Facebook). Regarding the sample of professors and civil servants at the Federal University of Sergipe, we counted on the dissemination through the Dean of People Management (PROGEP) in which the link was sent every two weeks to the institutional e-mail of the servers and teachers.

### Statistical analysis

Comparisons of socioeconomic variables between the groups evaluated before and during the pandemic were made using Student's *t* test for continuous variables and Fisher's exact test for categorical variables. To assess the influence of the evaluation moment for data collection (before and during the pandemic) on the scores of each domain of the questionnaires applied, ANCOVA was used. In these models, scores were defined as the response variable and the moment of assessment as the explanatory variable. The covariates included in the model were those that showed statistically significant

differences between before and during the pandemic. Statistical analyzes were performed using the R statistical software (ver. 4.1.0; R Foundation for Statistical Computing, Vienna, Austria). The statistical significance value was defined as  $\alpha = 0.05$ .

## RESULTS

Three hundred and eighty-four women were recruited for the research, of which 342 were included as indicated in the adapted flowchart (Fig. 1), and divided into BP group ( $n = 62$ ) and DP ( $n = 280$ ) group. The Table 1 reveals the education level variables self-reported by climacteric women in the previous and during the pandemic. Age, race, and education level showed statistically significant differences between groups ( $P < 0.05$ ). DP group had a lower age and a more predominance of white race compared to BP, but marital status was equivalent across groups ( $P > 0.05$ ). Then, age, race, and education level were covariates included in ANCOVA model.

After comparing with subcategories of the MRS scale between the BP and DP groups (Fig. 2), there was a significantly decrease in somatic symptoms (BP group:  $7.84 \pm 4.46$ , DP group:  $5.94 \pm 9.20$ ;  $P = 0.003$ ). Psycho-

**Table 1.** Comparison of education level variables self-reported by climacteric women before and during the pandemic

Variable	BP (n = 62)	DP (n = 280)	P value
Age (y)	52.9 ± 5.4	49.9 ± 6.6	< 0.001
Marital situation			0.137
With mate	59.7	69.5	
No mate	40.3	30.5	
Race			< 0.001
Black	29.0	9.0	
White	19.4	38.6	
Brown	48.4	48.0	
Indigenous	1.6	1.1	
Yellow	1.6	3.2	
Schooling			< 0.001
Illiterate/fundamental I incomplete	26.2	0.4	
Fundamental I complete/fundamental II incomplete	24.6	4.3	
Fundamental complete/incomplete medium	13.1	3.6	
Full average/incomplete superior	29.5	11.7	
Full superior	6.6	80.1	

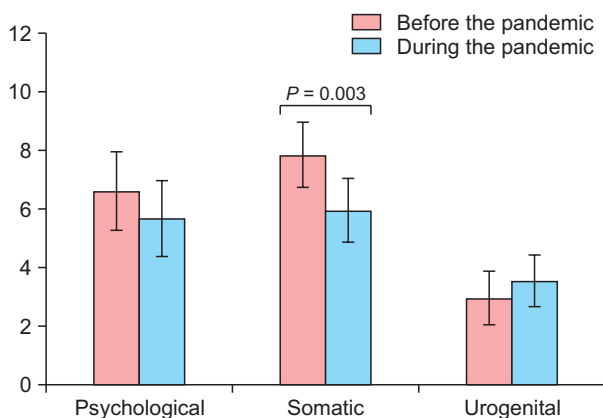
Data are presented as mean ± standard deviation or %.

Source: survey data.

BP: before the pandemic, DP: during the pandemic.

logical and somatic urogenital did not significantly exhibited differences, then these symptoms were similar between groups (BP group:  $6.61 \pm 5.32$ , DP group:  $5.67 \pm 10.97$ ;  $P = 0.217$  and BP group:  $2.96 \pm 3.65$ , DP group:  $3.55 \pm 7.52$ ;  $P = 0.262$ ).

After performing a sub-analysis, including only subjects with low socioeconomic status according to the classification of the publication Critério Brasil 2019, significant results were evidenced in the psychological and somatic domains of MRS. The psychological item – BP group: 7.56 (95% confidence interval [CI], 5.65–9.47); DP group: 3.74 (95% CI, 0.71–6.76);  $P = 0.042$  and somatic item – BP group: 9.7 (95% CI, 8.22–11.17); DP group: 4.1 (95% CI, 1.77–6.44);  $P < 0.001$ , shown in



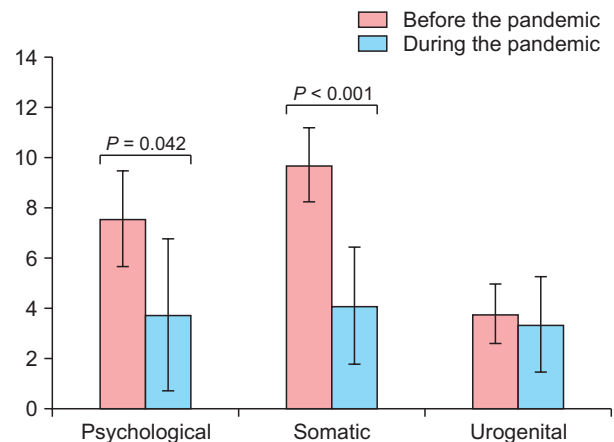
**Fig. 2.** Comparison of the domains of the Menopause Rating Scale between the period before and during the pandemic. Brazil, January/September 2020.

**Figure 3.**

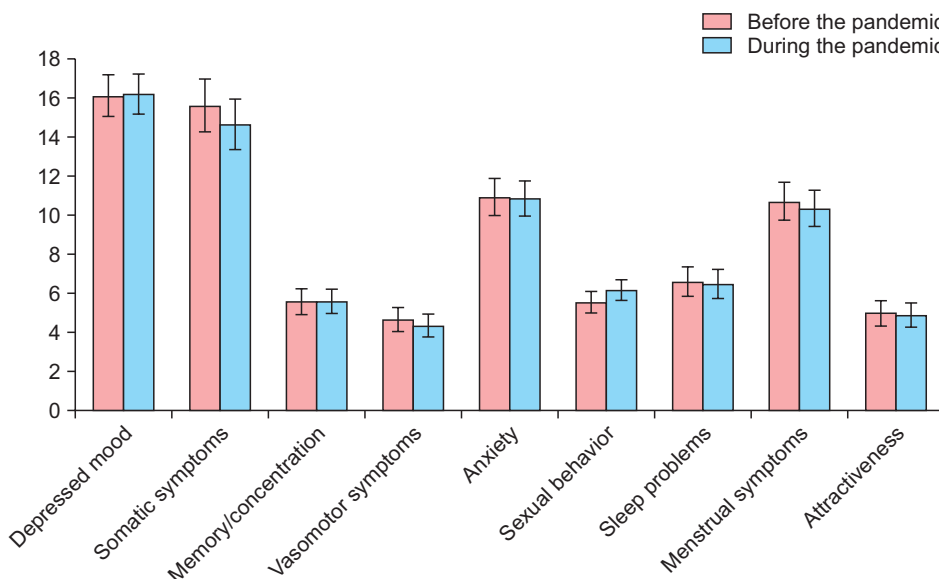
Figure 4 reflects the domains of the WHQ scale before and during the pandemic context, where no statistical difference was observed in any of the domains comparing BP group and DP group ( $P > 0.05$ ). However, there was a slight tendency for an increase of sexual deficit domain in DP group compared to BP group (BP group:  $5.55 \pm 2.21$ , DP group:  $6.16 \pm 4.55$ ;  $P = 0.053$ , respectively).

## DISCUSSION

Due the strong impact of climacteric period and the



**Fig. 3.** Subcomparison of the Menopause Rating Scale domains in subjects with low socioeconomic status evaluated between the period before and during the pandemic. Brazil, January/September 2020.



**Fig. 4.** Comparison of the domains of the Women’s Health Questionnaire scale before and during the pandemic.

importance of self-care in the quality of life on women [5], particularly considering the current pandemic, the aim of the current study was to analyze and compare the climacteric symptoms, the quality-of-life indices, and the self-care attitudes in women before and during the COVID-19 pandemic. Positively somatic symptoms were decreased during the pandemic context and the others remain stable, with a tendency to increase urogenital symptoms. The quality-of-life indices and self-care attitudes were similar before and during the pandemic.

During pandemic, the lockdown forced individuals to change their behaviors and daily routines, influencing physical activity and exercise. It was well established that COVID-19 had a negative role on physical activity and those who were less active showed superior levels of mood disorders, such as depression and anxiety [11]. In addition, the World Health Organization guidelines for physical activity have reduced by approximately 18% and the decreases were greatest among the elderly and young population, affecting both genders [12]. Interestingly, in initial phase of pandemic, there are a negative perception and motivation for exercise, after that, a progressive increase in positive self-perception, motivation for exercise, dependence to obtain fitness equipment and home exercising [13].

Besides, the exercise practice plays a positive role on climacteric women, increasing female health and quality of life [14]. Combined exercise in post-menopausal women during 10 weeks was effective to improve climacteric symptoms, including the somatic domain [15]. Then, the improvement of somatic symptoms in our women population during pandemic might be caused by increased exercise levels, in the DP group evaluated at a later phase of COVID-19 [12]. This practice contributes to the maintenance of mental health, as well as the reduction of psychosomatic symptoms and the processing of the immunological system [13].

A Turkish study conducted with 256 climacteric women showed that one in two evaluated women exhibited symptoms of urinary incontinence [16]. In addition to urinary problems, the urogenital domain of the MRS scale also comprises the impairment of sexual functions [17]. A Spanish study carried out during the pandemic with post-climacteric women demonstrated that having an active sexual life less compromise in quality of life [18]. However, in our study, a trend to increase the sexual problems was verified, even approximately 70% of women having partner. A cross-sectional

study in Iraq during the pandemic, with 296 women, found that sexual function is highly impacted by the stress brought by COVID-19, impairing the quality of life of the women [19]. Also, another study showed a relationship between marital status and a higher prevalence of genital complaints in women, concluding that those who have an active sexual life and have a higher perception of changes in the genital tract during menopause [20].

The psychological symptoms before and during pandemic was similar; however, a study carried out in Colombia reported an increase in these types of symptoms during the pandemic. These results were justified once authors suggested that age is a risk factor for psychological pathologies when associated with social isolation, such as that emerge by COVID-19 [21]. In our case, the social restriction imposed for the control of new cases of coronavirus led to reduced work levels, remote work and the change of daily routine, may have impacted on the control of psychological symptomatology especially with regard to increased self-care measures [22].

Regarding education, the high levels are associated with a lower occurrence of psychological disorders [5]. Besides, the low level of education is associated with high intensity of climacteric symptoms and reduced quality of life [23,24]. In our case, we performed a sub-analysis with the samples that had a low level of education and low socioeconomic status, to verify the influence of these factors in the two moments of the pandemic researched, and we found significant differences in the psychological and somatic factors of the MRS scale, which also showed a reduction in the indices for the period during the pandemic.

A higher score was observed in somatic, vasomotor, attraction, menstrual problems, and anxiety symptoms, but they are equivalent before and during pandemic. In fact, in a period prior to the pandemic, the high incidence of symptoms in somatic, anxiety/fears and attractiveness domains were already reported in literature [25]. A significant relationship between climacteric symptoms of moderate intensity and the emergence, or even accentuation of symptoms related to anxiety and depression has been indicated in women climacteric [26].

More than 50% of climacteric women had some sleep disorder during the pandemic [27], which is related to the reduction of adequate levels of life quality [4]. Another study revealed that higher sleep alterations were associated with loneliness resulting from social isola-

tion derived by pandemic [28]. Besides, psychosomatic factors related to menopause are also intensified by the presence of social isolation, fear, and insecurity, factors that were accentuated in pandemic [3,6]. The previous symptoms of aging such as genital atrophy and sleep disorders are strongly linked to lower levels of quality of life and biopsychosocial factors, and not only to hormonal decline, which acts as an important aggravating factor [29,30]. Interestingly, the pandemic did not change sleep quality in our data, which may be linked to the high level of female partners in our study.

It is hoped that the findings in present study will encourage for more future comparative studies between the pre-, during and post-pandemic periods, strengthening self-care measures and health care to know the real influence of pandemic in women health. The measurement of physical activity and/or exercise should be considered in scientific investigation, due the potential role to understand and interpret the climacteric symptoms response during pandemic. It is reasonable to assume that the present study has some limitations, such as the comparison of different groups of women in two different evaluation moments, the population number is different between groups, the lack of physical characteristics of sample and the implementation of methodology was different in sample groups. Reinforcing that all statistical tools were carefully used to minimize differences between groups.

The present study concluded that the COVID-19 pandemic did not impair the self-reported symptoms, quality of life and self-care attitudes of climacteric women. In addition, the pandemic context may have contributed to the reduction of somatic symptoms, probably explained by increased levels of exercise, reduced levels of work, and cultural pressure to comply with social norms and routines.

We understand that our sample cannot happen the way we planned, because the pandemic situation itself did not allow all processes to be carried out in the idealized way, but to reduce the differences between the sample, we carried out a homogenization of the data, first examining the differences between the groups between the variables used to characterize the sample and then using these variables to fit the models. Thus, any differences between groups in these variables were eliminated.

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## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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