

Article

Cognitive Subjective Well-Being during the Second Lockdown in Portugal: The Predictive Role of Sociodemographic and Psychopathological Dimensions

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Abstract: The negative impact of the COVID-19 pandemic on well-being has been widely described. However, studies on how country-specific characteristics influenced the impacts of the pandemic experience on cognitive subjective well-being are still needed. This study examined the predictive role of sociodemographic characteristics and psychopathological dimensions on cognitive subjective well-being during the second lockdown period in Portugal. An online sample of 332 adults completed a series of self-report instruments between April and July 2021, covering the period from 15 January to 15 March 2021. Hierarchical regression analysis revealed that being married or living in a civil union, not having/or living with children, not living with/or caring for an elderly person, and not being infected with the SARS-CoV-2 were significant and positive predictors of higher cognitive subjective well-being. In contrast, a non-heterosexual sexual orientation; isolation due to COVID-19; and higher levels of depression, anxiety, and stress, along with repetitive negative thinking, were significant predictors of negative cognitive subjective well-being during the second lockdown in Portugal. The importance of developing promotional, preventive, and remedial interventions focused on specific country and individual characteristics for poor cognitive subjective well-being for promoting mental health and well-being during this critical period and similar future crisis events is discussed.

Keywords: COVID-19; cognitive subjective well-being; sociodemographic characteristics; psychopathology; repetitive negative thinking



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1. Introduction

Multiple cases of a new acute respiratory syndrome due to infection with a new coronavirus, the SARS-CoV-2, spread rapidly in the Wuhan region of China in December 2019 (COVID-19) [1]. On 30 January 2020, the World Health Organization (WHO) [2] declared COVID-19 an international and public health emergency that evolved into a pandemic. The negative and severe impact of this global disaster [3] posed significant challenges to individuals, communities, and societies. These resulted in significant mental health stress [4,5], as well as reduced perceived cognitive subjective well-being (i.e., life satisfaction) [6–8]. Several measures have been proposed by governments and public health organisations worldwide [9,10] to contain the spread of SARS-CoV-2 and its catastrophic consequences, such as the high number of deaths [11,12].

Around the world, governments imposed closures and various restrictions on business and social interactions except for access to basic necessities (e.g., food and medicine) [13,14]. During the second lockdown, Portugal faced severe restrictions on the normal movement of citizens, associated with a sharp increase in SARS-CoV-2 infections and a consequent high

mortality rate due to COVID-19 (the worst mortality rate during the pandemic). The Portuguese government declared a state of emergency, and only food stores, pharmacies, and health care centres were open. Remote work and home schooling became mandatory, and gyms, coffee shops, and theatres were closed (DGS—<https://covid19.min-saude.pt/>) (Date accessed: 26 January 2022). According to Le and Nguyen [15], severe lockdowns resulted in a wide range of psychopathological symptoms such as anxiety, depression, and stress that largely correlated with concerns about basic needs (e.g., food) and unemployment.

At the same time, some sociodemographic variables may act as risk factors for the development of mental health problems, which in turn are associated with lower cognitive subjective well-being, as well as increased vulnerability to the adversities of the lockdown [3,15–20]. Being a woman [3,15–17], being a health professional or otherwise having a higher risk of becoming infected in the workplace [3,17,18], having responsibility for caring for children or the elderly [3], and having a mental illness [16,19,20] are examples of these variables.

Psychological distress associated with lockdowns appears to have negatively impacted cognitive subjective well-being [21], with data from the first wave of the COVID-19 showing declines in perceived cognitive subjective well-being [22]. The severe mitigation measures, particularly the lockdown strategies across countries, had a strong negative impact on cognitive subjective well-being [16], as well as on mental health [14]. However, some factors, such as higher levels of psychological resilience [23], had a protective effect and were associated with higher levels of cognitive subjective well-being [24]. The protective role of these factors depends on the specific mitigation measures implemented in each country.

Considering the pandemic evolution and that most of the research on predictors of cognitive subjective well-being refers to the first wave of COVID-19 and the first lockdown, it is relevant to examine the predictors of cognitive subjective well-being during the second lockdown. To further explore how country-specific traits as well as mitigation strategies influenced the experience of the second lockdown in Portugal, this study intended to investigate the predictive role of sociodemographic variables previously studied, COVID-19-related dimensions (e.g., vaccination status, which only appeared during this stage), psychopathological dimensions with relatively known effects on cognitive subjective well-being (i.e., depression, anxiety, and stress), and specific psychopathological dimensions (i.e., repetitive negative thinking, anxiety associated with COVID-19, and fear of COVID-19). It was expected that age [4], gender [3,15–17], professional status [3,17,18], and being a caregiver [3] would significantly predict poor cognitive subjective well-being. It was also expected that COVID-19 infection would significantly predict poor cognitive subjective well-being [25,26]. Finally, it was expected that psychopathological symptoms predict poor cognitive subjective well-being [27]. This study may contribute to identifying and analysing the specific variables that predict cognitive subjective well-being in Portugal in adverse times. This analysis may have important political and social implications, as it may help the Portuguese government and Portuguese social institutions to implement more effective policies in the future.

1.1. Cognitive Subjective Well-Being and COVID-19

Research in positive psychology has received special attention in the last twenty years, as it proposes a different approach to human behaviour focused on positive emotions and on the experience of subjective well-being [28,29]. Subjective well-being is a multidimensional construct that includes cognitive (e.g., life satisfaction) and emotional (i.e., presence of positive emotions, absence of negative emotions) components of a person's life that are often associated with the construct of happiness [30,31]. Cognitive subjective well-being describes the evaluation and assessment of one's own life, often measured by life satisfaction [28].

Studies conducted during the pandemic crisis have shown that periods of lockdown negatively impacted well-being [32], particularly cognitive subjective well-being [33–35], with pre-pandemic levels deteriorating by the time of the first lockdown and further

deteriorating during subsequent lockdowns [35]. Country-specific effects and pandemic severity (e.g., mortality rates) are also reported to have large effects on cognitive subjective well-being [34].

The pandemic was associated with increased levels of psychological distress and psychopathology [36], such as depressive and anxiety symptoms [37], as well as with feelings of hopelessness and pessimism [38–40]. Overall, the pandemic negatively impacts cognitive subjective well-being [36–40].

1.2. Predictors of Cognitive Subjective Well-Being during COVID-19 Pandemic

The COVID-19 pandemic is a phenomenon that affects people from diverse backgrounds and sociodemographic characteristics. Research on the predictive value of sociodemographic characteristics on cognitive subjective well-being during the COVID-19 pandemic has shown that gender plays an important role. Women report being more vulnerable, which negatively impacts their perceptions of cognitive subjective well-being [41,42]. Being part of a sexual minority [43,44], being infected with SARS-CoV-2, or having an infected family member also negatively affect cognitive subjective well-being [41] and quality of life [3].

According to a Portuguese study conducted during the first wave of COVID-19, women, younger adults, unemployed people, single people, and people with caregiving responsibilities exhibited lower levels of perceived quality of life [3]. Studies performed in other European countries revealed that being a woman, being a younger adult, or having a lower level of education were risk factors for poorer cognitive subjective well-being [42]. In addition, non-European research also highlighted the importance of certain sociodemographic characteristics. Being younger, living alone, and having a lower level of education predicted more health concerns and lower cognitive subjective well-being [45]. In contrast, in a study conducted in Lebanon during the COVID-19 pandemic, men reported being less satisfied with their lives and having greater concerns about their health [45]. Thus, the country-specific context (i.e., the government interventions and health policies used to mitigate the COVID-19 effects) seems to relate to sociodemographic risk factors for cognitive subjective well-being. However, further studies are needed to extend the previous findings to the second wave of COVID-19.

Additionally, COVID-19-related variables appear to be associated with lower cognitive subjective well-being [26,46,47], with individuals at higher risk of contracting the virus revealing poor cognitive subjective well-being [26]. COVID-19 exposure is also related to a heightened risk for burnout [46] and developing psychopathological symptoms [48]. Despite anxiety and fear related to COVID-19 vaccination, research showed that individuals who were already vaccinated against COVID-19 reported greater cognitive subjective well-being, as well as lower symptoms of depression, anxiety, and stress [25]. Considering the novelty of the vaccination process, and the knowledge on the SARS-CoV-2 spreading, studies on the predictive role of COVID-19-related dimensions and cognitive subjective well-being are still scarce.

Furthermore, psychological problems during the pandemic are also strongly associated with poor cognitive subjective well-being [27]. A systematic review shows that mental health problems are frequently observed during this crisis, with significant prevalence rates during the initial lockdown [49], which required both medical and social attention [50]. Interestingly, a slight decrease in psychological distress over time has been observed in longitudinal studies [50–52]. Consistent with this, a slight decrease in anxiety symptoms was reported as new information about the virus was disseminated and people developed some coping strategies to deal with uncertainty and worry [53]. However, the observed decrease remains above the rates of psychopathology before the pandemic [53,54], suggesting a slight increase in depressive symptomatology, mainly due to the periods of isolation and strictly imposed social distancing [49–52].

Mental health problems described as of particular concern during the COVID-19 pandemic include depressive symptoms, anxiety, and stress [49,50,52–56]. In addition to

these psychopathological markers, repetitive negative thinking (RNT) [57], fear of COVID-19 [27,58], and anxiety associated with the COVID-19 [40,56,59] have also been identified as risk factors for psychopathology. These predictive dimensions are associated with poor cognitive subjective well-being during the pandemic [27,40,55]. Although previous studies have explored the main psychopathological symptoms, namely depression, anxiety, and stress [49,50,52,53,55], specific psychopathological dimensions can also be considered. RNT has been described as a transdiagnostic process that is strongly related to emotional disorders and poor cognitive subjective well-being [57], but knowledge is lacking of the predictive role of RNT in cognitive subjective well-being during the pandemic crisis [55]. Additionally, two key dimensions newly addressed during the COVID-19 pandemic are fear of the COVID-19 [58] and anxiety associated with the COVID-19 [59]. Even though the predictive role of these dimensions on cognitive subjective well-being has been explored [27,40,56], studies within the Portuguese context are missing.

1.3. The Current Study

Cognitive subjective well-being was negatively affected by the COVID-19 containment measures, particularly by the strictly imposed lockdowns and the psychological distress associated with the disease [15,16,21,22]. Previous research supports the predictive role of sociodemographic characteristics on cognitive subjective well-being [41,42,45], and mental health problems [53,54,60–63], during the first wave of COVID-19. The predictive effect of these variables appears to fluctuate over time, depending on the nature of the mitigation strategies [49,51–53]. Nonetheless, COVID-19-related variables have been poorly studied, mostly due to the novelty of the vaccination process and the evolution of the scientific knowledge on SARS-CoV-2 dissemination [46]. Similarly, specific psychopathological dimensions, such as the RNT, the fear of COVID-19 and the anxiety associated with the COVID-19 have also been analysed [27,40,56].

Beyond this gap, research also highlights the heterogeneity of experiences around the globe, due to differences in the mitigation strategies across countries [23,24,45] and COVID-19 waves. Given the importance of analysing these specific country aspects in more detail, and to deeply explore COVID-19-related variables, along with specific psychopathological dimensions, this study sought to examine the predictive role of sociodemographic characteristics and psychopathological dimensions on cognitive subjective well-being (i.e., life satisfaction), during the second lockdown due to the COVID-19 outbreak, in Portugal.

2. Materials and Methods

2.1. Procedures

A research project aiming at exploring the individual experience of the second lockdown in Portugal was approved by the ethical committee from (blinded to the review process). After all the authorizations were conceded, a web survey was developed using Qualtrics software. This was a cross-sectional survey based on a non-random convenience sample of adults living in Portugal between 15 January and 15 March 2021 (the second official lockdown in Portugal). The study was publicly advertised on social networks (i.e., Instagram, LinkedIn, Facebook, and Twitter) and mailing lists (university e-mail contacts and researchers e-mail contacts) between April and July 2021. An invitation to take part in the study by completing the web survey was shared. All volunteers received a full explanation about the study purpose. No monetary or other type of incentives were offered. Filling in the questionnaire took about 15 to 20 min according to Qualtrics data.

Considering the potential harmful effects associated with the use of a mental health scale, the main researcher's contact information was given so that the participants could clarify doubts on the questionnaire items or share any discomfort regarding their content. Additionally, the Portuguese National Health System had available a 24 h line for psychological counselling and crisis intervention with licensed Clinical and Health Psychologists. Participants were required to give their informed consent before participating. Data were

collected and archived at the university's server. For maintaining anonymity and privacy of data, no IP addresses were recorded.

2.2. Participants

The original sample included 338 participants from a non-random convenience sample. From this group, 2 participants were excluded as they were under 18 years old, and 4 participants were excluded for not providing complete and relevant sociodemographic information. The study sample included 332 Portuguese adults ($n = 280$, 84.3% women; $n = 52$, 15.7% men), with a mean age of 35.19 ($SD = 11.63$), ranging from 18 to 68 years old. Most participants had 12 or more years of schooling ($n = 302$; 91.0%), followed by 9 to 12 years of schooling ($n = 30$; 9.0%). In what concerns civil status, 48.2 % ($n = 160$) of participants were single, 47.0 % ($n = 156$) were married or were living in civil union, and 5.0% ($n = 16$) were divorced or widowed. Most participants identified as heterosexual (86.7%, $n = 288$), and 13.3 % ($n = 44$) as gay, lesbian, bisexual, or asexual. Detailed information on the sociodemographic characteristics is presented in Table 1.

Table 1. Sociodemographic characterization of the sample ($N = 332$).

Variables	n	%
Professional situation		
Employed	224	67.5
Unemployed	20	6.0
Student	82	24.7
Retired	6	1.8
Children		
Yes	92	27.9
No	238	72.1
Elderly (cohabitation)		
Yes	22	6.6
No	310	93.4
Isolation during 2nd confinement		
Yes	52	15.7
No	280	84.3
COVID-19 infection		
Yes	20	6.0
No	312	94.0
Vaccination COVID-19		
No, I refused	2	0.6
No, waiting for availability according to age	262	78.9
Yes, first dose	36	10.8
Yes, two doses	32	9.6
Working in first line or risk for COVID-19 (health care centres, residential for elderly, security forces and fire workers)		
Yes	70	21.1
No	262	78.9
Psychiatric illness before 2nd lockdown		
Yes	64	19.3
No	268	80.7
Psychiatric medication during 2nd lockdown		
Yes	52	15.7
No	280	84.3

2.3. Measures

A Sociodemographic Information Sheet was developed to gather information on sex, age, marital status, sexual orientation, education level, and residence at the time of the second lockdown in Portugal. It also included questions on family structure (e.g., children and older person cohabitation), employment situation, and psychiatric history (i.e.,

history of previous mental illness and use of psychiatric drugs). Due to the study purpose, additional information on the vaccination status against COVID-19 was also collected (i.e., if the individual had already been vaccinated or not), infection with SARS-CoV-2 (i.e., if the individual had been infected with SARS-CoV-2 during the second lockdown), and isolation due to COVID-19 (i.e., if the individual had spent some time in isolation due to infection with SARS-CoV-2 during the second lockdown).

The Satisfaction with Life Scale (SWLS) [64] is a brief and easy-to-administer self-report measure for assessing cognitive subjective well-being (i.e., overall and global satisfaction with life). It includes five items, which are answered according to a Likert scale, from 1 (*strongly disagree*) to 7 (*strongly agree*). All items are summed up to provide a total score of the scale ranging from 7 to 35. Higher scores indicate greater levels of satisfaction with life. In line with the results of the study concerning the scale development, the results suggested a unifactorial structure and good psychometric properties, including good reliability [64]. The Portuguese version of SWLS, which was translated and validated by Simões [65], also confirms the unifactorial structure and revealed good psychometric properties. For the current study, internal consistency of the scale was 0.86.

The Depression, Anxiety and Stress Scale–21 (DASS-21) [66] is a short version of the Depression, Anxiety and Stress Scale (DASS) [67], developed for assessing depressive, anxiety, and stress symptoms in clinical and community contexts. The DASS-21 is a self-report measure comprising 21 items that are answered according to a four-point Likert scale, from 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). For computing the total score and subscales score, items must be summed up and then multiplied by two to correspond to the original version. Total scores range between 0 and 126. Subscales score range between 0 and 42. Higher levels indicate more severe symptomatology. The original and short versions of the DASS revealed good psychometric properties, including reliability, temporal stability, convergent and discriminant validity [66,67]. Likewise, the Portuguese version of the DASS-21 revealed good psychometric properties [68]. For the current study, internal consistency of the scale was 0.93.

The Persistent and Intrusive Negative Thoughts Scale (PINTS) [69] is a very brief and easy to administer self-report measure for assessing repetitive negative thinking (RNT) as a neutral-disorder transdiagnostic construct. The PINTS comprises five statements assessed on five-point Likert scales from 1 (*never*) to 5 (*always*). For calculating the total score, all items should be summed up. The total score ranges between 5 and 25, with higher scores indicating greater levels of repetitive negative thinking. The original version of the PINTS suggested a one-factor structure with good to excellent psychometric properties including reliability, temporal stability, and construct and discriminant validity [69]. Similarly, the Portuguese version of the PINTS also revealed good to excellent psychometric properties, replicating the one-factor structure [70]. For the current study, internal consistency of the scale was 0.90.

The Coronavirus Anxiety Scale (CAS) [63] is a brief self-report measure developed for assessing physiological responses to COVID-19 anxiety. The CAS comprises five items that are answered according to a five-point Likert scale, from 0 (*not at all*) to 4 (*nearly every day over the last 2 weeks*). The total score is obtained by summing up the five items, ranging between 0 and 20. Higher scores indicate greater levels of physiological anxiety related to the COVID-19 pandemic. The original version of the CAS revealed a one-factor structure and good to excellent psychometric properties, namely reliability and convergent and discriminant validity [63]. The Portuguese version [71] also showed good to excellent psychometric properties. For the current study, the internal consistency of the scale was 0.79.

The Fear of COVID-19 Scale (FCV-19S) [62] is a brief self-report measure developed for assessing main fears associated with the COVID-19 pandemic in the general population. The FCV-19S includes seven items assessed in a five-point Likert scale, from 1 (*strongly disagree*) to 5 (*strongly agree*). The total score was obtained by summing up the items. Scores range from 7 to 35 points, and higher scores indicate greater fear of the COVID-19. The original version of the FCV-19S revealed a one-factor structure with good psychometric

properties, such as reliability, convergent, and discriminant validity [62]. The Portuguese version replicated the one-factor model and revealed good to excellent reliability, convergent, and discriminant validity [71]. For the current study, internal consistency of the scale was 0.78.

3. Results

3.1. Mean, Standard Deviations, and Pearson's Coefficient Correlation between SWLS, PINTS, DASS and Its Subscales, CAS and FCV-19S

Means and standard deviations for cognitive subjective well-being, RNT, psychopathology, depression, anxiety, stress, COVID-19-related anxiety, and fear of COVID-19 are presented in Table 2. According to the Pearson's coefficient correlations, all variables in the study revealed a significant coefficient correlation, except for the correlation between cognitive subjective well-being and the COVID-19-related anxiety ($r = -0.07, p = 0.202$); and between cognitive subjective well-being and the fear of COVID-19 ($r = -0.06, p = 0.252$). Cognitive subjective well-being was statistically significant and negatively correlated with RNT, psychopathology, depression, anxiety, and stress (r from -0.21 to $-0.53, p < 0.001$). RNT, psychopathology, depression, anxiety, stress, COVID-19-related anxiety, and fear of COVID-19 revealed statistically significant and positive correlations with each other (r from 0.26 to $0.92, p < 0.001$) (see Table 2).

Table 2. Mean, standard deviation, and Pearson coefficient correlations between SWLS, PINTS, DASS and its subscales, CAS and FCV-19S (N = 332).

	M (SD)	Pearson Coefficient Correlations								
		1.	2.	3.	4.	5.	6.	7.	8.	
1. SWLS	18.17 (4.39)	-								
2. PINTS	15.85 (4.26)	-0.33 ***	-							
3. DASS-21	25.68 (20.72)	-0.43 ***	0.56 ***	-						
4. DASS-D	7.49 (7.26)	-0.53 ***	0.42 ***	0.83 ***	-					
5. DASS-A	5.57 (7.68)	-0.21 ***	0.47 ***	0.87 ***	0.55 ***	-				
6. DASS-S	12.62 (8.65)	-0.39 ***	0.58 ***	0.92 ***	0.66 ***	0.74 ***	-			
7. CAS	1.08 (2.11)	-0.07	0.28 ***	0.43 ***	0.34 ***	0.40 ***	0.38 ***	-		
8. FCV-19S	16.40 (4.56)	-0.06	0.26 ***	0.40 ***	0.27 ***	0.40 ***	0.37 ***	0.45 ***	-	

Note. SWLS: Satisfaction with Life Scale, score range between 7 and 35 [cognitive subjective well-being]; PINTS: Persistent and Intrusive Negative Thoughts Scale, score range between 5 and 25 [repetitive negative thinking]; DASS-21: Depression, Anxiety and Stress Scale-21, score range between 0 and 126; DASS-D: Depression subscale from the Depression, Anxiety and Stress Scale-21, score range between 0 and 42; DASS-A: Anxiety subscale from the Depression, Anxiety and Stress Scale-21, score range between 0 and 42; DASS-S: Stress subscale from the Depression, Anxiety and Stress Scale-21, score range between 0 and 42; CAS: COVID-19 Anxiety Scale, score range between 0 and 20; FCV-19S: Fear of COVID-19 Scale, score range between 7 and 35; *** $p < 0.001$.

3.2. Hierarchical Regression Analysis for Cognitive Subjective Well-Being with Sociodemographic and Psychopathological Variables as Predictors

A hierarchical regression analysis was performed to investigate the predictors of cognitive subjective well-being in Portuguese adults during the second lockdown. The assumption of collinearity was tested, and the results indicated that multicollinearity was not a significant problem in the model tested (tolerance values ranged from 0.42 to 0.96 [72,73]; VIF ranged from 1.04 to 2.09 [73–75]).

In the first step, sociodemographic information (i.e., age, sex, sexual orientation, educational level, civil status, and professional situation) was added in the regression model to examine the predictive roles in cognitive subjective well-being. A significant model was achieved, $F(6,323) = 11.70, p < 0.001$, with sociodemographic information explaining 17.9% of the variance of cognitive subjective well-being ($R^2 = 0.179$). As shown in Table 3, sex ($\beta = 0.15, p = 0.005$), civil status ($\beta = 0.19, p = 0.003$), and sexual orientation ($\beta = -0.28, p < 0.001$) emerged as significant predictors of cognitive subjective well-being. According to step one of the hierarchical regression analyses, being a man and being married or

living in a civil union were significant and positive predictors of cognitive subjective well-being, whereas having a non-heterosexual sexual orientation was a significant predictor of negative cognitive subjective well-being during the second lockdown in Portugal due to the COVID-19 pandemic.

In the second step, sociodemographic information related with the pandemic (i.e., having and cohabiting with children, cohabiting, and taking care of an older person, having experienced an isolation period due to COVID-19, being infected with the SARS-CoV-2, having received a COVID-19 vaccine, having a psychiatric illness prior to the second lockdown, and taking psychiatric medication during the second lockdown) was entered in the regression model. A significant model was achieved, $F(13,316) = 8.54$, $p < 0.001$, with sociodemographic information and sociodemographic information related to the pandemic explaining 26.0% of the variance of cognitive subjective well-being ($R^2 = 0.260$), and an increase of the explained variance of 8.10% ($\Delta R^2 = 0.081$). As shown in Table 3, civil status ($\beta = 0.21$, $p = 0.002$), and sexual orientation ($\beta = -0.23$, $p < 0.001$), as well as cohabiting and taking care of an older person ($\beta = 0.18$, $p < 0.001$), being isolated due to the COVID-19 ($\beta = -0.11$, $p = 0.044$), and having a psychiatric illness premorbid to the lockdown ($\beta = -0.14$, $p = 0.022$) were significant predictors of cognitive subjective well-being. According to step two of the hierarchical regression analysis, being married or living in a civil union and not cohabiting and taking care of an older person were significant and positive predictors of cognitive subjective well-being. In contrast, having a non-heterosexual sexual orientation, being isolated during a period due to the COVID-19, and having a psychiatric illness prior to the second lockdown were significant predictors of negative cognitive subjective well-being during the second lockdown in Portugal.

Finally, in the third step, psychopathological variables (i.e., RNT, depression, anxiety, stress, anxiety-related to the COVID-19, and fear of the COVID-19) were entered in the regression model. A significant model was obtained, $F(19,310) = 12.15$, $p < 0.001$, with all variables entered in the model explaining 42.7% of the variance of cognitive subjective well-being ($R^2 = 0.427$), and an increase of the explained variance of 16.7% ($\Delta R^2 = 0.167$). Several variables emerged as significant predictors, as the civil status ($\beta = 0.17$, $p = 0.004$), sexual orientation ($\beta = -0.15$, $p = 0.002$), cohabiting and having children ($\beta = 0.12$, $p = 0.023$) cohabiting and taking care of older person ($\beta = 0.11$, $p = 0.026$), being isolated due to the COVID-19 ($\beta = -0.10$, $p = 0.038$), being infected with the SARS-CoV-2 ($\beta = 0.11$, $p = 0.034$), RNT ($\beta = -0.13$, $p = 0.028$), depression ($\beta = -0.41$, $p < 0.001$), anxiety ($\beta = -0.24$, $p = 0.001$), and stress ($\beta = -0.24$, $p = 0.003$) (cf. Table 3). According to the third step of the hierarchical regression analysis, being married or living in a civil union, not having or cohabiting with children, not cohabiting and taking care of an older person, and not being infected with SARS-CoV-2 were significant and positive predictors of cognitive subjective well-being. In contrast, having a non-heterosexual sexual orientation; being isolated during a period due to the COVID-19; and having higher levels of RNT, depressive, anxiety, and stress were significant predictors of negative cognitive subjective well-being during the second lockdown in Portugal.

Table 3. Hierarchical regression analysis for cognitive subjective well-being with sociodemographic and psychopathological variables as predictors (N = 332).

	β	95% CI	<i>t</i>	R ²	ΔR^2	Tolerance	VIF
Step 1				0.179	0.179 ***		
Age	0.08	−0.02–0.08	1.31			0.644	1.554
Sex	0.15 *	0.54–3.04	2.82			0.917	1.090
Educational level	0.09	−0.25–2.84	1.66			0.959	1.043
Civil status	0.19 **	0.57–2.71	3.02			0.664	1.506
Sexual orientation	−0.28 ***	−5.00–−2.32	−5.36			0.910	1.099
Professional situation	0.09	−3.13–0.25	−1.68			0.911	1.098
Step 2				0.260	0.081 ***		
Age	0.07	−0.02–0.08	1.06			0.526	1.902
Sex	0.09	−0.24–2.28	1.60			0.825	1.213
Educational level	0.04	−1.00–2.11	0.70			0.872	1.146
Civil status	0.21 **	0.68–2.93	3.16			0.554	1.804
Sexual orientation	−0.23 ***	−4.28–−1.62	−4.35			0.849	1.178
Professional situation	0.06	−2.69–0.70	−1.16			0.834	1.198
Children (cohabitation)	−06	−0.56–1.74	1.01			0.657	1.523
Elderly (cohabitation)	0.18 ***	1.41–4.99	3.52			0.873	1.146
Isolation period	−0.11 *	−2.63–−0.04	−2.02			0.779	1.283
COVID-19 infection	0.09	−0.38–3.62	1.59			0.766	1.306
COVID-19 vaccination	−0.06	−1.79–0.51	−1.09			0.810	1.235
Psychiatric illness	−0.14 *	−1.33–−0.1	−2.30			0.662	1.511
Psychiatric medication	0.02	−1.15–1.62	0.33			0.684	1.461
Step 3				0.427	0.167 ***		
Age	−0.002	−0.05–0.04	−0.31			0.468	1.138
Sex	0.07	−0.32–1.99	1.42			0.776	1.289
Educational level	0.08	−0.24–2.68	1.65			0.785	1.274
Civil status	0.17 **	0.49–2.51	2.91			0.538	1.860
Sexual orientation	−0.15 **	−3.13–−0.71	−3.12			0.810	1.234
Professional situation	−0.08	−2.74–0.31	−1.57			0.816	1.226
Children (cohabitation)	0.12 *	0.17–2.25	2.28			0.627	1.595
Elderly (cohabitation)	0.11 *	0.23–3.51	2.24			0.820	1.220
Isolation period	−0.10 *	−2.41–−0.07	−2.08			0.753	1.328
COVID-19 infection	0.11 *	−15–3.80	2.12			0.722	1.386
COVID-19 vaccination	−0.02	−1.23–0.91	−0.29			0.730	1.369
Psychiatric illness	−0.01	−0.65–0.50	−0.25			0.596	1.677
Psychiatric medication	−0.07	−2.12–0.41	−1.33			0.646	1.547
PINTS	−0.13 *	−0.25–−0.02	−2.21			0.556	1.799
CAS	−0.07	−0.37–−0.07	−1.42			0.691	1.447
FCV-19S	−0.05	−0.15–−0.05	−0.93			0.671	1.490
DASS-D	−0.41 ***	−0.32–−0.17	−6.16			0.424	2.060
DASS-A	−0.24 **	−0.23–−0.06	−3.48			0.494	2.057
DASS-S	−0.24 **	−0.21–−0.04	−2.99			0.508	2.094

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; Sex (women vs. men); Educational level (under 12 years vs. 13 years or more); Civil status (single/divorced/widowed vs. married/civil union); Sexual orientation (heterosexual vs. non-heterosexual); Professional situation (employed/students vs. unemployed/retired); Children (yes vs. no); Elderly (yes vs. no); Isolation period (yes vs. no); COVID-19 infection (yes vs. no); COVID-19 vaccination (yes vs. no); Psychiatric illness (before lockdown—no vs. yes); Psychiatric medication (during lockdown yes vs. no); PINTS—Persistent and Intrusive Negative Thoughts Scale [repetitive negative thinking]; CAS—COVID-19 Anxiety Scale; FCV-19S—Fear of COVID-19 Scale; DASS-D—Depression subscale from the Depression, Anxiety and Stress Scale-21; DASS-A—Anxiety subscale from the Depression, Anxiety and Stress Scale-21; DASS-S—Stress subscale from the Depression, Anxiety and Stress Scale-21.

4. Discussion

During the first wave of COVID-19, severe restrictions on freedom were imposed through the lockdown rules, and sociodemographic predictors of cognitive subjective well-being have been extensively described [3,41,42]. The predictive role of psychopathological

symptoms on cognitive subjective well-being is also widely supported [27]. Considering the pandemic evolution, the novelty of the vaccination process, and the increased knowledge of the virus spreading during the second lockdown in Portugal, this study examined the predictive role of sociodemographic characteristics and psychopathological dimensions on cognitive subjective well-being during this period. The results showed that sociodemographic characteristics, COVID-19-related variables, and psychopathological dimensions explained almost 43% of the variance regarding cognitive subjective well-being, with depressive symptomatology emerging as the main significant and negative predictor.

The hierarchical regression yielded a significant model, suggesting that sociodemographic information and variables directly related to the COVID-19 experience, along with psychopathology dimensions, significantly contribute to explaining the perceptions of cognitive subjective well-being, during the second lockdown in Portugal. Overall, the blocks of variables entered in the hierarchical regression—sociodemographic information and psychopathological dimensions—were more relevant predictors of cognitive subjective well-being than variables directly related to the COVID-19 experience, given the increase of the explained variance when these blocks of variables were included. Specifically, being single and having a non-heterosexual sexual orientation were significant predictors of negative cognitive subjective well-being, in line with previous research [3,43,44]. Studies on these sociodemographic variables showed that being single [3] or living alone [45] predict negative quality of life as well as mental health [60]. It is possible that single or divorced individuals experience more difficulties in social interactions, during the lockdown, which may explain their lower levels of life satisfaction. Regarding sexual minorities, evidence shows that they have been dealing with increased stress during the pandemic, as some individuals spent more time with their unsupportive families, which heightened the risk for engaging in psychological and physical violence [43,44]. In the same vein, minority group membership, such as a non-heterosexual sexual orientation, is a predictor of negative mental health and well-being [43,44]. Current findings suggest that being single and belonging to a sexual minority are significant predictors of negative cognitive subjective well-being, during the second lockdown in Portugal, even when COVID-19 specific variables and psychopathological variables are accounted for in the regression model.

Similarly, living with or caring for children and/or for the elderly, isolation due to the COVID-19, and infection with the SARS-CoV-2, were predictors of negative cognitive subjective well-being, even when sociodemographic variables and psychopathological variables were accounted for in the regression model. Several studies indicate that caregivers of children and seniors are at greater risk of poor quality of life [3]. This is possibly due to the responsibilities and demands associated with the management of work-life balance, as children have home schooling [3]. Furthermore, the elderly are at higher risk for health complications related to contracting the virus, developing more severe symptoms and possibly dying [76,77]. Our results confirm these previous findings and extend them to the second wave of the COVID-19 pandemic in Portugal. This may reflect the difficulty in successfully preventing mental health and well-being programmes. If someone is infected with SARS-CoV-2, an isolation period is imposed by the Portuguese health department. In addition, isolation due to the COVID-19 implies being infected or a suspected case or having someone living with an infected/suspected case. According to previous research, infection due to COVID-19 increases anxiety related to COVID-19 and the fear of death [78,79]. Moreover, isolation due to COVID-19 and infection with SARS-CoV-2 require a restricted lockdown with strict security and health measures. Again, in line with the existing evidence, these strict measures have negative effects on social interaction with roommates, and exacerbate health-related thoughts, fears related to intolerance of uncertainty, and fear of death [78,79]. These empirical enlightenments may help explain why these two variables negatively predicted cognitive subjective well-being in the current study. Other evidence supports that infection with SARS-CoV-2 negatively predicts cognitive subjective well-being [41]. This possibly explains the negative impact of prolonged isolation due

to the pandemic on cognitive subjective well-being. Nonetheless, this block of variables accounts for less than 10% of the variance explained of cognitive subjective well-being.

Finally, feeling depressed, anxious, or stressed, as well as having more negative and intrusive thoughts, were also predictors of poor cognitive subjective well-being. This block of variables explained more than 15% of the variance in cognitive subjective well-being. Considering that previous mental illness [61] and poor mental health [27] are negative predictors of cognitive subjective well-being, these results reinforce that experiencing depression, anxiety, and stress, during the second lockdown in Portugal, also predict negative cognitive subjective well-being. Although anxiety and stress appear to have a similar predictive role ($\beta = -0.24$), depressive symptoms have a greater predictive role, compared to other variables in study ($\beta = -0.41$), which is also consistent with data showing a slight increase in depressive symptomatology during the pandemic [49,52]. Nonetheless, considering the higher correlation between these variables, it is possible that the predictive value may be inflated. According to Pico-Perez et al. [61], the aggravation of these symptoms is mainly due to the lockdown periods, as well as to the strict and mandatory virus mitigation strategies, such as social distancing and isolation. Previous research shows that repetitive negative thinking is an important dimension of psychopathology before [70,80,81] and, particularly, during the COVID-19 pandemic [60]. Moreover, psychotherapeutic interventions for emotional disorders have been focused on transdiagnostic features for improving therapeutic effectiveness and well-being and decreasing associated costs [61]. Our findings allow for establishing a direct link between repetitive negative thinking and poorer cognitive subjective well-being, highlighting its potential transdiagnostic role. Research on the transdiagnostic features is of utmost importance, by empirically contributing to the predictive role of these dimensions on cognitive subjective well-being, but also on improving mental health and well-being.

Interestingly, neither anxiety related to COVID-19 nor fear of COVID-19 was a significant predictor of cognitive subjective well-being, despite the evidence pointing to these as potential risk factors for psychopathology during the pandemic [27,40,56]. Research on the predictive role of anxiety related to COVID-19 and fear of COVID-19 on cognitive subjective well-being has been conducted during the first wave of COVID-19 [27,40,56]. During the initial spread of the virus, uncertainty was greater, and disease effects were not well known. By the time of the current study, during the second lockdown in Portugal, the vaccination process had already begun, and research shows that vaccines help promote a sense of security [25], which could possibly help explain the lower levels of anxiety and fear associated with the COVID-19. Another possible explanation for these results is that the participants may have experienced more anxiety related to uncertainty, economic worries, and hopelessness about the future during the first lockdown.

This study has some limitations that can be pointed out. One of them is the small size of the sample and the use of a non-random convenience sample. Considering the sampling procedure, the study sample may not fully reflect the variability that would be expected in the population in terms of sociodemographic characteristics. Although most participants were women, the bias that this overrepresentation could bring is frequently observed in the literature, especially in Portuguese studies [3,54]. Future studies should consider larger samples to increase their sociodemographic variability and increase their representativeness. Another limitation is related to the lack of information on other sociodemographic variables (e.g., community/local support, death by COVID-19 in the family) and other psychopathological symptoms (e.g., trauma-related, grief-related) that were not queried and therefore not tested. Gathering additional sociodemographic information could be useful for further research. A web survey was used here, which facilitated dissemination and allowed for a high number of participants. However, it also only reached individuals with Internet access who were familiar with web surveys. In future studies, it will be important to collect data in person to assist participants in accessing and completing the questionnaires. Additionally, the study was a retrospective study, and some memories may not be as accurate as others, which may affect, for example, self-assessment of cognitive

subjective well-being. Although the assumption of collinearity has been assessed, and the results did not indicate significant problems in the model tested, the significant correlations between the variables may indicate some overlap in the variables included in the model. Finally, further studies should investigate the indirect effects of sociodemographic and COVID-19-related variables on the relationship between psychopathological symptoms and cognitive subjective well-being, which were not addressed in the present study. Nevertheless, considering the Pearson correlation coefficients achieved and the existing literature, it is possible that they have a specific effect on cognitive subjective well-being.

5. Conclusions

The pandemic is having a severe adverse impact on people's lives and mental health worldwide [54]. Mental health inevitably impacts cognitive subjective well-being, with literature highlighting country-specific impacts during lockdown periods [34]. The current study examined the predictive role of sociodemographic information, information related to the COVID-19, and psychopathological symptoms on cognitive subjective well-being. Results showed that being single; belonging to a sexual minority; living with children and older adults; being isolated due to infection with COVID-19; being infected with SARS-CoV-2; and having higher levels of repetitive negative thinking, depression, anxiety, and stress symptoms negatively predicted cognitive subjective well-being during the second lockdown in Portugal.

This study also identifies vulnerable groups who may need special support in coping with other crises and who could be particularly vulnerable to other stressful situations. These findings have important implications for health policy and practices, as they highlight the importance of developing support, prevention, and remedial interventions to increase the resilience and well-being of these individuals and reduce their vulnerability to adverse life events, focusing on specific risk factors in each country. Providing people with opportunities to develop their socioemotional skills and strengthen their social support network by creating specific community response plans can also play a protective role. More specifically, in future situations, the Portuguese government and social institutions should consider developing and promoting specific help for single individuals and individuals living with children and older adults, namely, informal caregivers. It may be relevant to assign support teams to visit and aid these individuals to decrease their social isolation and relieve their burden. The LGBTQIA+ associations in Portugal should be particularly aware of the major risk that sexual minorities face during these adverse times and closely work with the authorities to foster cognitive subjective well-being of these minorities. In addition, a more effective promotion of the phone crisis intervention and psychological counselling of the National Health Care Service is needed to help sexual minorities to reach brief counselling services. This psychological counselling phone service may be an important source of support for individuals who are isolated due to infection with COVID-19, or infected with SARS-CoV-2, as well as for those with higher levels of repetitive negative thinking, depression, anxiety, and stress symptoms. Along with these strategies, disseminating information on the mental health services available to deal with crisis, as well as psychoeducation aiming to decrease the mental health stigma, may contribute to reducing psychopathological symptoms in the Portuguese context.

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