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# Levels and variables associated with psychological distress during confinement due to the coronavirus pandemic in a community sample of Spanish adults

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## Abstract

Due to the COVID-19 pandemic's consequences and the state of alarm, literature has shown that people worldwide have experienced severe stressors that have been associated with increased prevalence of emotional distress. In this study, we explored psychological distress (depression, anxiety, and somatization symptoms) using an online survey platform in a sample of 1,781 Spanish adults during the confinement due to COVID-19, relationships between distress and sleep problems, affect, pain, sleep, emotional regulation, gender, type of housing, history of psychopathology, and living alone during the confinement, and differences depending on demographic and psychological variables. Results showed that between 25% and 39% of the sample referred to clinically significant levels of distress. In addition, women showed higher levels of distress, negative affect, perception of pain, and cognitive reappraisal and lower levels of emotional suppression and sleep quality than men. A history of psychopathology, being younger, living alone or in a flat was associated with higher distress. Finally, the variables most strongly related to distress were negative and positive affect, levels of pain, sleep quality, and emotional suppression. Our results highlight the important role of emotional suppression, cognitive reappraisal, and loneliness and the impact of being a woman and younger in Spain during the COVID-19 pandemic. Therefore, it would be necessary to provide assessments of distress levels in these population groups and focus psychological preventive and therapeutic online interventions on expressing emotions and preventing loneliness.

## KEYWORDS

associated variables, COVID-19, emotional regulation, psychological distress

## 1 | INTRODUCTION

Coronaviruses are an extensive family of viruses that can cause disease in both animals and humans. According to the World Health Organization (WHO, 2020), coronaviruses are known to cause respiratory infections in humans, ranging from the common

cold to more serious diseases, such as the Middle East respiratory syndrome (MERS), severe acute respiratory syndrome (SARS), and the most recently discovered disease caused by the coronavirus, COVID-19.

The COVID-19 epidemic was declared a pandemic by the WHO, which means that a large number of people would be affected. The most common symptoms of COVID-19 are fever, tiredness, and dry cough, although some people may also have pain, nasal congestion, runny nose, sore throat, or diarrhoea (WHO, 2020). These symptoms

The study was approved by the Ethics Committee of the Catholic University of Valencia, with the reference UCV/2019-2020/148.

are usually mild and appear gradually, and most people (about 80%) recover from the disease without any special treatment, whereas around one in six people who contract COVID-19 develop a serious illness and suffer respiratory problems (WHO, 2020). Older people and those with underlying medical conditions (high blood pressure, heart problems, or diabetes) are more likely to develop a serious illness that can lead to death (WHO, 2020).

Quarantine is one of the oldest and most effective tools to control communicable disease outbreaks (Goh et al., 2006), which is why the Spanish government declared a state of alarm in the country on March 14, 2020. Its main measure was the imposition of a national quarantine and, therefore, the confinement of most of the population in their homes. The measure went into effect at 00:00 on Sunday March 15, and it ended on June 21, 2020. The strict phase of confinement lasted from March 15 to April 12, and Spanish citizens were not allowed to leave home except for reasons of absolute necessity (e.g., acquire basic food and go to the hospital or to the bank). Then, the state of alarm continued with less strict measures in the de-escalation phases, from Phase 0 to Phase 3, which lasted until May 20. During these phases, citizens could leave their homes progressively during specific time zones that depended on their age and for limited periods of time each day. In Phases 1–3, people could progressively move to second homes, meet in small groups, go to restaurants with limited capacity, or travel across provinces, autonomous regions, and then the country.

Because of the pandemic's consequences and the state of alarm, between March and June 2020, Spanish people experienced severe stressors that have been associated worldwide with emotional distress. A recent review (Brooks et al., 2020) that included 24 selected studies on the psychological impact of quarantine concluded that the most common reactions included post-traumatic stress (PTSD), confusion, and anger. In addition, the authors reported that some of the main stressors were quarantine duration and fear of infection (Bai et al., 2004). Another stressor during and after quarantine was financial loss due to the inability to work (in Spain due to temporary dismissal—ERTE) (Pellecchia, Crestani, Decroo, Van den Bergh, & Al-Kourdi, 2015). Other authors have highlighted stressors such as social isolation (Barger, Messerli-Bürgy, & Barth, 2014), which seems to be related to depression, anxiety, and suicidal behaviour (e.g., Barger et al., 2014; Calati et al., 2019; Lim, Rodebaugh, Zyphur, & Gleeson, 2016).

Psychological responses to COVID-19 in China have suggested the presence of fear of the unknown and uncertainty, and these stressors lead to the development of mental disorders such as stress, anxiety, depression, somatization, and increased alcohol and tobacco consumption (Shigemura, Ursano, Morganstein, Kurosawa, & Benedek, 2020). In another Chinese study with a community population affected by the current pandemic (Wang et al., 2020), the authors explored the psychological impact of COVID-19 and the quarantine situation in 1,210 participants during January and February 2020. The authors found that 54% of the participants evaluated considered the impact of the pandemic to be moderate or severe, 16.5% reported moderate or severe depressive

### Key Practitioner Message

- Around one third of adults in Spain have suffered from clinical levels of distress and depressive symptoms during the COVID-19 pandemic.
- Special attention should be paid to people with previous mental disorders, women, and younger people and those living alone or in more uncomfortable living conditions.
- Stronger predictors of distress were emotional suppression, sleep problems, negative affect, and pain.
- Psychological therapeutic interventions should be focused on encouraging emotional expression and preventing isolation through online resources.

symptoms, 28.8% reported moderate or severe anxiety symptoms, and 8% reported moderate to severe levels of stress. One of the main concerns reported was that family members would contract COVID-19 (75%). Female gender, student status, the level of physical health, and pain were associated with psychological symptoms. Qiu et al. (2020) conducted in China a nationwide large-scale survey ( $n = 52,730$ ) and found that 35% of the respondents experienced psychological distress and that gender (female), younger age (18–30 years old), higher education, occupation, and region were related to these higher levels of distress.

A recent unpublished study (Twenge & Joiner, 2020) comparing psychological distress in the United States during the pandemic ( $n = 2032$ ) and prepandemic (2018 National Health Interview Survey,  $n = 24,683$ ) showed that, in late April 2020, adults in the United States reported substantially higher mental distress than in 2018. Specifically, 70% of the sample referred to moderate or severe distress in 2020 (Kessler et al., 2002), in comparison with 22% in 2018. Moreover, differences were larger in younger people and people living with children.

Similar figures have been found in adults in Spain. For example, in a recent study with  $n = 976$  citizens in the Basque Country (northern Spain) (Ozamiz-Etxebarria, Dosil-Santamaria, Picaza-Gorrochategui, & Idoiaga-Mondragon, 2020), higher levels of symptoms were found after the stay-at-home order. Specifically, 22.2% of women and 17.9% of men showed mild to extremely severe levels of stress. In the case of anxiety levels, 25.9% of women and 13.9% of men showed moderate-severe levels, and 21% and 17.3%, respectively, reported depressive symptoms. Moreover, younger individuals with chronic diseases reported more symptoms than the rest of the population. González-Sanguino et al. (2020) conducted a cross-sectional online survey of 3,480 Spanish people, and the results revealed that 18.7% of the sample showed depressive symptoms, 21.6% reported anxiety symptoms, and 15.8% had PTSD symptoms. The female gender, younger ages, previous diagnoses of mental or neurological disorders, and being affected or having a close relative affected by the virus were associated with greater

psychopathology. Loneliness was the strongest predictor of depression, anxiety, and PTSD.

Odrizola-González, Planchuelo-Gómez, Iruña, and de Luis-García (2020) cross-sectionally analysed the psychological impact of COVID-19 in a community sample of university students ( $n = 2,530$ ) during the first weeks of confinement. The authors found moderate to extremely severe levels of anxiety, depression, and stress in 21.34%, 34.19%, and 28.14% of the respondents, respectively, and a total of 50.43% referred to a moderate to severe impact. Similarly, Losada-Baltar et al. (2020) carried out a study with 1,310 Spanish people (age range: 18–88 years) during a lock-down period at home, and they found that some of the factors associated with higher distress were being female, younger, more time exposed to news about COVID-19, more contact with relatives different from those they live with, lower sleep quality, and greater loneliness. Vicario-Merino and Munoz-Agustin (2020) found, in 147 Spanish adults, that stress and anxiety levels increased in relation to age, level of responsibilities, and worry about economic loss. In healthcare workers (Romero et al., 2020), these reactions were higher, especially in respiratory workers and emergency medicine workers and in geographical areas with a higher incidence of COVID-19.

Finally, several studies have highlighted the association between emotional regulation strategies and distress in adult populations, especially between emotional suppression or inhibition and distress (i.e., Dalgleish, Yiend, Schweizer, & Dunn, 2009; Krause, Mendelson, & Lynch, 2003; Lynch, Robins, Morse, & Krause, 2001). In fact, attempts to suppress negative emotions have been linked to increased negative emotions (Dalgleish et al., 2009). In addition, cognitive reappraisal has been related to health and well-being (Mirlohi, Mohajerin, Mirlohi, & Aref, 2017).

## 1.1 | Justification

To the best of our knowledge, no studies have explored the relationship between emotional regulation strategies and the distress response of Spanish citizens during the national lockdown, and we would like to extend the literature exploring psychological distress and associated variables during confinement in Spain. Thus, it would be necessary to explore levels of psychological distress and variables associated with higher levels of distress in order to develop strategies to reduce symptoms during and after the crisis (Wang et al., 2020).

For this reason, the main aims of this study were first, to detect levels of symptoms of psychological distress (depression, anxiety, and somatization symptoms) in Spanish adults during the confinement due to COVID-19; second, to explore differences in distress and other psychological variables (sleep problems, affect, pain, sleep, and emotional regulation), depending on socio-demographic variables or history of psychopathology; and three, to explore which of the assessed variables are more strongly associated with distress.

## 2 | METHOD

### 2.1 | Procedure and participants

The study procedure was approved by the ethical committees of the Catholic University of Valencia, Saint Vincent Martyr, code number UCV/2019-2020/148. Participants were recruited through social network announcements (mainly Facebook, WhatsApp, Twitter, LinkedIn, and Instagram) using snowball sampling techniques. Moreover, a description of the project and requests for participation were sent to associations and public and private institutions that collaborate with the research team. On April 1, 2020, we sent a web-based survey in Spanish, 18 days after the declaration of the nationwide State of Alarm and the subsequent national lockdown. We finished our first wave of assessments on Sunday, April 17. Thus, our study was carried out during the strict phase of confinement (April 12) and during 5 days of Phase 1 of de-escalation (e.g., free circulation within the same province, meeting up to 10 people, going to bars and restaurants with a limited capacity of 33%, etc.). All participants provided their consent to participate in the study, and they answered a 20- to 30-min survey using the Survey Monkey online platform.

Participants were people between 18 and 91 years old living in Spain and experiencing mandatory confinement at home from the previous Monday, March 16.

A total of  $N = 1,851$  participants were recruited in this first wave of assessments. Eighty participants were excluded from this study due to incomplete assessments; thus, the total sample was composed of  $N = 1,781$  adult participants. All of them were assessed on socio-demographic and clinical characteristics, psychological distress, positive and negative affect, emotional dysregulation, pain, and sleep quality.

In addition, 65.5% of the participants ( $n = 1,167$ ) were from the Valencian Community, 7.3% ( $n = 130$ ) from the Community of Madrid, 6.7% ( $n = 119$ ) from Catalonia, 3.4% ( $n = 61$ ) from Galicia, 3.7% ( $n = 66$ ) from Castilla la Mancha and Castilla León, and the remaining 13.4% ( $n = 238$ ) came from other communities.

Regarding gender,  $n = 390$  (21.9%) were men, and  $n = 1,385$  (77.8%) were women. In relation to age, the mean age was 35.22 (standard deviation [SD] = 11.19). The majority of the sample ( $n = 1,165$ , 65.4%) were graduates,  $n = 578$  (32.5%) had secondary studies, and  $n = 38$  (2.1%) had primary elementary studies. A total of  $n = 331$  (18.6%) of the participants were working in person in essential or healthcare activities,  $n = 610$  (34.3%) were working remotely from home,  $n = 356$  (20%) had suffered temporary dismissal—ERTE,  $n = 150$  (8.4%) were not working due to temporary disability, and  $n = 334$  (18.8%) were unemployed before the state of alarm. In addition,  $n = 246$  people (13.8%) were living alone during the confinement;  $n = 206$  (11.6%) with parents, brothers, and sisters;  $n = 343$  (19.3%) with a partner and children;  $n = 641$  (36%) with a partner;  $n = 74$  (4.2%) with flat mates;  $n = 43$  (2.4%) with grandparents; and  $n = 185$  (10.4%) referred to other situations. Finally,  $n = 1,388$  (77.9%) lived in a flat, and  $n = 393$  (22.1%) lived in a house.

## 2.2 | Assessment

We elaborated an ad hoc questionnaire that included socio-demographic and clinical information: age, gender, civil status, the number of persons living in the same home during the confinement, work status during the confinement (working in person in first responder or healthcare activities, working remotely from home, temporary dismissal—ERTE, temporary disability, or unemployed before the state of alarm), type of housing during confinement, diagnosis and treatment of previous mental disorders, and having been infected by the coronavirus or having an infected relative. Only some of the variables have been analysed in relation to distress in this study.

The Brief Symptom Inventory 18 (BSI-18)—Spanish version—(Derogatis, 2001) is the latest in an integrated series of self-reported measures (SCL-90; BSI) designed to assess psychological distress. This instrument consists of 18 items rated on a 5-point Likert scale (“0 = not at all” to “4 = extremely”), and participants are asked to rate how much they have been bothered by each symptom in the past 7 days. The BSI-18 yields a global score—General Severity Index (GSI)—and three subscale scores: somatization, depression, and anxiety. Raw scores on the GSI range from 0 to 72, and each subscale has a scoring range of 0–24. In addition, Derogatis (2001) suggested a *T*-score of 63, based on community norms, as a cut-off score to indicate clinically significant distress. In this study, adequate internal consistency was found for the total scale ( $\alpha = .91$ ) and for the three subscales: depression  $\alpha = .83$ , anxiety  $\alpha = .82$ , and somatization  $\alpha = .79$ , respectively.

Emotional Regulation Questionnaire (ERQ) (Gross & John, 2003), Spanish version by Cabello, Salguero, Fernández-Berrocal, and Gross (2013), assesses 10 different features using a 7-point Likert scale of the emotion regulation process in adults: cognitive reappraisal and emotional suppression. In our data, the instrument showed an adequate internal consistency for both cognitive reappraisal ( $\alpha = .78$ ) and emotional suppression ( $\alpha = .81$ ).

The Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988; Spanish version: Sandín et al., 1999) includes 20 adjective items, 10 assessing positive affect, and 10 negative affect. Respondents are asked to rate the extent to which they have experienced each particular emotion within a specified time period, using a 5-point scale: 1 = “very slightly or not at all,” 2 = “a little,” 3 = “moderately,” 4 = “quite a bit,” and 5 = “very much.” In our sample, we found adequate consistency indexes for both the positive ( $\alpha = .83$ ) and negative affect ( $\alpha = .81$ ) factors.

An adapted version of the Insomnia Severity Index (ISI) (Morin, Stone, Trinkle, Mercer, & Remsberg, 1993) was used to assess sleep quality. This instrument assesses sleep quality through five Likert-type items ranging from 0 = *none* to 4 = *very severe*: Last night, I had trouble falling asleep; last night, I had trouble staying asleep; this morning, I had trouble waking up early (0–4); last night, the quality of my sleep was 0 = *bad*–4 = *good*; today, I am satisfied with the quality of my sleep (0 = *very unsatisfied*–4 = *very satisfied*); currently, my sleep problems interfere with my daily activity (they do not interfere at all

[0]–they interfere a lot [4]). The scores range from 0 to 16. In this study, the total scale showed adequate internal consistency ( $\alpha = .82$ ).

Visual Analogue Scale (VAS) (Aitken, 1969) was used to assess pain perception. It consists of a straight line, with the end points defining extreme limits such as “no pain at all” and “pain as bad as it could be.” The patient is asked to mark his/her pain level in the past 7 days on the line between the two end points. How much pain have you experienced?

## 2.3 | Data analysis

We estimated the sample's socio-demographic and clinical characteristics through descriptive statistics and frequencies. To test differences between gender, type of housing, history of psychopathology, living alone or with others, and the work situation during confinement, we carried out *t* tests and ANOVAs.

The normality of the data was examined to see if assumptions of the structural equation modelling (SEM) estimation were met. All measured continuous variables were examined for departure from normality and determined to be normal in terms of skewness (<1.5) and kurtosis (<4.5). Zero-order correlations were used to examine bivariate relations among the variables, and we carried out multiple linear regression analysis (stepwise method) to identify the best predictors of psychological distress. These data were analysed using SPSS 24 (SPSS, Chicago, IL).

## 3 | RESULTS

A total of 120 participants (6.83%) referred to having a diagnosis of a mental disorder. Moreover, 147 (8.3%) referred to currently receiving psychotherapy, and  $n = 32$  (1.8%) were undergoing psychiatric treatment.

In relation to levels of distress, Table 1 shows means and SDs for psychological distress, emotional suppression, cognitive reappraisal, pain, sleep quality, and case frequencies of GSI cases for psychological distress. A total of 439 participants (25%) showed clinically significant levels of distress above the cut-off point of  $GSI \geq 63$  and 697 (39.6%) when the scores of two of the three scales of depression, anxiety, or somatization exceeded the cut-off point of  $\geq 63$  (Derogatis, 2001).

Moreover,  $n = 516$  participants (29.1%) showed clinically significant levels of depression,  $n = 280$  (15.8%) anxiety, and  $n = 423$  (23.8%) somatization.

### 3.1 | Comparisons between groups

We compared groups based on gender, the history of diagnosis of mental disorder (Table 2), living alone, and the type of housing (Table 3). Comparisons showed that statistically significant differences between men and women were found in levels of distress ( $t = 5.63$ ,  $p = .000$ ), emotional suppression ( $t = -7.23$ ,  $p = .000$ ), cognitive

**TABLE 1** Means and standard deviations of psychological variables

	M (SD)	Range
Distress	13.23 (10.61)	0–72
Positive affect	32.67 (6.90)	5–50
Negative affect	23.49 (7.10)	5–50
Cognitive re-evaluation	28.66 (6.12)	6–42
Emotional suppression	12.94 (5.33)	4–28
Pain	2.69 (2.57)	0–10
Sleep quality	10.97 (3.26)	0–16
	n	%
GSI cases	439/697	25/39.6
Depression GSI	516	29.1
Anxiety GSI	280	15.8
Somatization GSI	423	23.8

Abbreviation: GSI, General Severity Index.

reappraisal ( $t = 2.27, p = .045$ ), levels of pain ( $t = 6.66, p = .000$ ), and sleep quality ( $t = -5.17, p = .000$ ). Specifically, women showed, on the one hand, higher levels of distress, negative affect, cognitive reappraisal, and pain and, on the other, lower levels of positive affect and sleep quality. In addition, comparisons of participants with and without a diagnosis of mental disorders revealed that people with a diagnosis of a mental disorder showed higher levels of distress ( $t = -11.94, p = .000$ ), negative affect ( $t = -7.06, p = .000$ ), and pain ( $t = -3.64, p = .000$ ) and lower levels of positive affect ( $t = 6.70, p = .000$ ), cognitive reappraisal ( $t = 2.00, p = .006$ ), and sleep quality ( $t = 6.43, p = .000$ ). Regarding differences between those living alone and living with others, statistically significant differences were found in levels of distress ( $t = -2.66, p = .008$ ) and sleep quality ( $t = 1.99, p = .047$ ) (Table 3). Levels of distress were higher, and sleep quality was lower in people living alone. No statistically significant differences were found in the remaining psychological variables.

Finally, comparing people living in a house with those living in a flat (i.e., flat and attic), we found statistically significant differences in levels of distress ( $t = 2.79, p = .005$ ), pain ( $t = 3.29, p = .001$ ), sleep

quality ( $t = -2.11, p = .035$ ), and positive affect ( $t = -3.80, p = .000$ ) but not in negative affect, emotional suppression, or cognitive reappraisal. People living in flats showed higher levels of distress and pain and lower sleep quality and positive affect, compared with those living in a house (Table 3).

### 3.2 | Correlations

Negative significant correlations were found between age and distress ( $r = -.11, p = .000$ ), and positive and significant correlations were found between psychological distress and emotional suppression ( $r = .16, p = .000$ ), negative affect ( $r = .70, p = .000$ ), and level of pain during the previous 7 days ( $r = .42, p = .000$ ). Negative and significant correlations were found between distress and positive reappraisal ( $r = -.17, p = .000$ ), positive affect ( $r = -.46, p = .000$ ), and sleep quality ( $r = -.47, p = .000$ ).

### 3.3 | Regression analysis

After identifying variables that correlated with distress, we carried out a multiple linear regression analysis using the stepwise method, introducing positive and negative affect, level of pain, sleep quality, emotional suppression, and cognitive reappraisal. Results revealed that the total model explained 58.9% of the variance in distress ( $R^2 = .590, R^2_c = .589, F = 495.22, p \leq .000$ ) and that the variables that best explained the variance in distress were negative affect ( $t = 29.92, p = .000$ ), positive affect ( $t = -9.77, p = .000$ ), level of pain ( $t = 9.47, p = .000$ ), sleep quality ( $t = -7.98, p = .000$ ), and emotional suppression ( $t = 2.87, p = .004$ ) (Table 4).

## 4 | DISCUSSION

This study had three main aims. The first was to explore the estimated prevalence of psychological distress (depression, anxiety, and

**TABLE 2** Comparisons between groups depending on gender and presence of mental disorder

N = 1752	Men (n = 386) M (SD)	Woman (n = 1,366) M (SD)	t	Mental dis. (n = 120) M (SD)	No mental dis. (n = 1,662) M (SD)	N = 1,758 t
Distress	10.56 (10.09)	13.98 (10.64)	5.63***	23.90 (15.04)	12.44 (9.77)	-11.94***
Pos. affect	33.52 (6.91)	32.45 (6.89)	-2.68**	28.44 (8.02)	32.97 (6.72)	6.97***
Neg. affect	21.78 (7.20)	23.96 (6.97)	5.41***	27.84 (8.34)	23.16 (6.87)	-7.06***
Emot. suppr.	14.64 (5.10)	12.46 (5.30)	-7.23***	13.77 (5.50)	12.87 (5.34)	-1.77
Cogn. re-ev.	28.06 (6.16)	28.86 (6.07)	2.27*	27.58 (6.43)	28.74 (6.09)	2.00**
Pain	1.94 (2.40)	2.91 (2.58)	6.66***	3.52 (2.84)	2.63 (2.54)	-3.65***
Quality sleep	11.72 (3.12)	10.76 (3.27)	-5.17***	11.11 (3.17)	19.14 (3.95)	6.43***

Note: Pos. affect: positive affect; neg. affect: negative affect; emot. suppr.: emotional suppression; cogn. re-ev.: cognitive re-evaluation; quality sleep: quality of sleep.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**TABLE 3** Comparisons between groups depending on living status and type of housing

N = 1,752	Live alone (n = 246) M (SD)	Live with others (n = 1,536) M (SD)	t	House (n = 387) M (SD)	Flat (n = 1,371) M (SD)	t
Distress	14.91 (12.06)	12.97 (10.34)	-2.66**	11.90 (10.12)	13.60 (10.72)	2.79**
Pos. affect	32.35 (7.24)	32.73 (6.87)	.78	33.86 (6.91)	32.34 (6.89)	-3.80***
Neg. affect	23.80 (7.47)	23.44 (7.04)	-.74	23.05 (7.16)	23.62 (7.08)	1.39
Emot. suppr.	13.10 (5.44)	12.91 (5.31)	-.52	12.64 (5.28)	13.02 (5.33)	1.26
Cogn. re-ev.	28.79 (6.28)	28.64 (6.09)	-.37	28.70 (6.15)	28.64 (6.11)	-.18
Pain	2.60 (2.64)	2.71 (2.56)	.60	2.32 (2.48)	2.80 (2.32)	3.29***
Quality sleep	10.59 (3.61)	11.04 (3.20)	1.99*	11.28 (3.29)	10.88 (3.16)	-2.11*

Note: Pos. affect: positive affect; neg. affect: negative affect; emot. suppr.: emotional suppression; cogn. re-ev.: cognitive re-evaluation; quality sleep: quality of sleep.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**TABLE 4** Regression analyses of emotional dysregulation, positive and negative affect, level of pain, and sleep quality as predictors of psychological distress

N = 1781	R <sup>2</sup>	R <sub>C</sub> <sup>2</sup>	F	p	
Predictors in the equation	B	Error B	$\beta$	t	p
Positive affect	-.26	.03	-.17	-9.77	.000
Negative affect	.78	.26	.53	29.92	.000
Emotional suppression	.09	.03	.04	2.87	.004
Pain	.65	.07	.16	9.46	.000
Sleep quality	-.46	.06	-.14	-7.98	.000
Variables excluded					
Cognitive re-evaluation	-.006	---	---	-.050	.960

Note: R<sub>C</sub><sup>2</sup> = corrected R square.

somatization symptoms) in Spanish adults during confinement due to COVID-19. The second was to explore the differences in distress and sleep patterns based on gender, type of housing, history of psychopathology, living alone, and the work situation during confinement. Finally, the third aim was to explore the psychological variables most strongly associated with psychological distress (positive and negative affect, pain, sleep quality, cognitive reappraisal, and emotional suppression).

In relation to our first objective, we found that between 25% and 39% of the sample, depending on the criteria used, referred to clinically significant levels of distress. Moreover, 29.1% showed clinically significant levels of depression, 15.8% anxiety, and 23.8% somatization. These results are lower than those found by Twenge and Joiner (2020), who found that 70% of a U.S. sample showed moderate to high levels of distress in late April 2020. However, they are quite similar to those found in China by Wang et al. (2020) and in the large-scale survey conducted by Qiu et al. (2020), with percentages of distress, anxiety, and depression ranging between 8% and 35%. In Spain, levels of distress, anxiety, and depressive symptoms range between 17% and 28% (González-Sanguino et al., 2020; Odriozola-González et al., 2020; Ozamiz-Etxebarria et al., 2020). Although differences between studies and nationalities could be

explained by sampling or the use of different assessments, mental distress seems to have been considerably higher in the United States than in Spain or China. Furthermore, distress levels in Spain seem to be similar to or even higher than those found in populations overcoming life-threatening events such as a diagnosis of cancer (Andreu et al., 2012).

With regard to the second objective of this study, women showed, on the one hand, higher levels of distress, negative affect, perception of pain, and cognitive reappraisal and, on the other, lower levels of emotional suppression and sleep quality than men. In general, these results support the literature on COVID-19 across countries, with women and people with a previous diagnosis of mental illness showing higher levels of distress and psychopathology (i.e., Brooks et al., 2020; González-Sanguino et al., 2020; Guo et al., 2020; Mazza, Sorce, Peyvandi, Vecchi, & Caprioli, 2020; Pappa et al., 2020; Qiu et al., 2020; Wang et al., 2020). As other authors have proposed (González-Sanguino et al., 2020), being a woman could be related to higher childcare demands and the feeling of being overwhelmed due to performing both work and household tasks. In fact, in the United States, Twenge and Joiner (2020) found higher distress in people living with children, a role that in many cultures mainly falls on women. In addition, people with a previous diagnosis of a mental disorder also

displayed higher levels of distress, negative affect, and pain, worse sleep quality, and lower levels of cognitive reappraisal. Similarly, González-Sanguino et al. (2020) and Dubey et al. (2020) found similar relationships between distress and a history of mental and neurological disorders. In many countries, people suffering from mental disorders have faced the discontinuation of psychiatric attention and attendance at social and rehabilitation facilities, thus diminishing resources that can buffer distress and increasing levels of perceived distress.

Moreover, levels of distress were higher, and sleep quality was lower in people living alone. In the same direction, loneliness has been strongly related to depression anxiety, PTSD, and distress during the pandemic (González-Sanguino et al., 2020; Losada-Baltar et al., 2020; Mazza et al., 2020), and in general, low social support and thwarted belongingness have been broadly related to depression and suicide ideation (Joiner, 2006; Klonsky & May, 2015).

People living in a house showed lower levels of distress, perceived better sleep quality, and showed higher positive affect than those living in flats. This result seems logical, given that in Spain, houses are usually located outside the city or in suburbs, and so people can choose to have less contact with other people (which is related to a sense of safety during the pandemic). Houses usually have a garden or more space for people living together inside the house. Thus, there are more opportunities to practice sports outside or have their own private area at home. A previous review (Gong, Palmer, Gallacher, Marsden, & Fone, 2016) found similar results, showing that neighbourhood quality, the amount of green space, and traffic volume were related to lower distress.

Age was negatively associated with distress, indicating that younger people have been more affected by confinement and COVID-19, in line with other authors (Twenge & Joiner, 2020). Recent research has highlighted that younger adults are more affected by loss of work (Soergel, 2020), and they are usually exposed to news on social networks more, which can trigger distress (Cheng, Jun, & Liang, 2014).

Psychological factors that were positively associated with distress in this study were emotional suppression, negative affect, and levels of pain during the previous 7 days, whereas negative associations were found with positive reappraisal, positive affect, and sleep quality. In addition, the variables most strongly related to distress were negative and positive affect, levels of pain, sleep quality, and emotional suppression. In other words, adults confined during the quarantine in Spain who showed higher levels of distress also showed negative affect, perceived higher levels of pain, sleep problems, and suppression of their emotions during the assessed period. These results support recent work on distress due to COVID-19, with relationships found between distress, sleep disturbances, negative affect, sleep problems (Losada-Baltar et al., 2020), and levels of pain (Wang et al., 2020). However, to our knowledge, studies focused on COVID-19 have not explored the role of certain emotion regulation strategies, such as cognitive reappraisal or emotional suppression, in psychological reactions to a pandemic and to confinement. To date, studies on emotional regulation have found that suppressing negative emotions is related to increased negative emotions

(Dagleish et al., 2009), and psycho-oncology studies examining the Type C personality have linked these emotional patterns to distress in cancer patients (Andreu et al., 2012; Durá et al., 2010).

In this regard, it seems that, in times of COVID-19, not expressing emotions of worry or fear, or even not sharing positive emotions, is related to higher levels of emotional suffering. However, Spanish people tend to be more expressive than other cultures. In fact, literature on emotional expression has shown more expressive patterns in Western countries such as Spain, especially for negative emotions (Fernández, Carrera, Sánchez Fernández, Paez, & Candia, 2000; Paez & Vergara, 1995). Despite the cultural tendency of Spanish people to express emotions, and the fact that traditionally women tend to express their emotions more than men, we found higher levels of distress in women, as in other studies carried out in Spain (Ausín, González-Sanguino, Castellanos, & Muñoz, 2020). Moreover, when we compared levels of emotional suppression in men and women, we found higher levels in men ( $t = -7.22, p = .000$ ). For this reason, although women express their emotions more openly than men, other factors, such as those related to the cultural and family role of women, may be more overwhelming during confinement and could explain the high levels of distress in this subpopulation. Another possible explanation is that the impact of confinement might have inhibited socially habitual emotional expression. Therefore, women could have shown greater levels of distress because their possibilities of expression were reduced during this period.

In addition, cognitive reappraisal was related to lower distress in this study, and cognitive reappraisal has been related to health and well-being in previous works (i.e., Mirlolhi et al., 2017). Because emotional expression and cognitive reappraisal have been found to be adaptive coping strategies during confinement, psychological prevention and intervention programmes should address the identification, expression, and use of cognitive reappraisal strategies to manage emotions. These could be addressed, specifically, using mobile Apps focused on emotional regulation strategies or social networks to alleviate loneliness.

## 5 | LIMITATIONS AND FUTURE DIRECTIONS

Currently, there is increased research on psychological reactions to COVID-19 in community samples worldwide. However, there is still a need for more studies in Spain, and to our knowledge, this is the first study to explore the role of emotional regulation strategies such as cognitive reappraisal and emotional suppression in distress reactions to a pandemic in a broad sample of Spanish adults. Thus, these results have important clinical implications and some limitations. First, this study is cross-sectional, and the reactions to the Covid pandemic can only be related to the moment of the assessment in a specific geographical area. Moreover, the majority of the participants were women and lived in a specific area—the Valencian Community—and so the results are mainly representative of this area with a specific prevalence of the pandemic and its social and healthcare

circumstances. In this regard, future longitudinal studies could test the predictive power of the assessed variables on distress across time and the long-lasting effects of the pandemic in the Spanish population. Moreover, due to the data collection method, snowball sampling techniques using online platforms, the population may not represent the overall Spanish population, and older people or people who use technology less may be underrepresented. There is a lower percentage of men than women; thus, it would be necessary to test our results in populations with a higher percentage of men. Finally, this collection method, although a valid tool for detecting symptoms, cannot replace a clinical evaluation to estimate clinically significant symptoms of distress, and so it does not allow us to estimate the prevalence of clinically significant distress.

Despite the limitations, our sample was broad and assessed during the state of alarm period, thus representing psychological reactions during a very specific and atypical moment affecting people's behavioural and emotional reactions. In addition, our results highlight the important role of emotional suppression, cognitive reappraisal, and loneliness and the impact of being a woman and younger. Therefore, it is necessary to provide assessments of distress levels in these population groups and focus psychological preventive and therapeutic interventions on expressing emotions, cognitively restructuring distressing events and building social networks for those who are facing this situation of isolation alone.

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