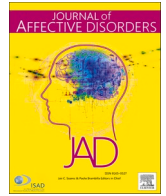




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Research paper

Concern about COVID-19 among the Spanish population: Validation of a scale and associated symptoms

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ABSTRACT

Background: The health crisis caused by the COVID-19 pandemic has led to a considerable increase in the psychopathology of COVID-19 patients and among the general population. This study aims to conduct the psychometric analysis of the scale of concern about COVID-19 in the Spanish population and to estimate the level of concern and dysfunctional anxiety present one year after the lockdown measures in Spain aimed at resisting the spread of the viral disease among the population.

Methods: The factorial structure of the instrument, its reliability for the general population and for COVID patients, and its construct validity have been analyzed, and measurements of dysfunctional concern have been obtained from a sample of 502 adults.

Results: The scale of concern about COVID-19 showed optimal results of reliability and validity for the Spanish population, confirming that it is an ideal instrument for estimating the concern regarding coronavirus contagion.

Limitations: This study used a cross-sectional design and thus, could not compare the changes in the incidence of anxiety symptoms before and after the COVID-19 outbreak. Furthermore, the use of mental health services prior to the COVID-19 restrictions was not assessed in this study, and therefore, no comparisons between the two time points could be made.

Conclusions: After a year of the confinement measures that was instilled to avoid further spread of the disease, the Spanish population presented levels of concern and anxiety that may require clinical attention, with a significant percentage of participants meeting the requirements to be diagnosed with generalized anxiety disorders.

1. Introduction

The United Nations has described the health crisis caused by the pandemic spread by the SARS-CoV-2 as the “seed of a mental health crisis” with proven increased anxiety and depression among the general population (Serafini et al., 2020; Torales et al., 2020; Vindegaard and Benros, 2020).

The severity of the physical symptoms of the disease caused by the COVID-19 coronavirus varies from mild to severe, with symptoms of infection that include fever, cough, and shortness of breath (Centers for Disease Control and Prevention, 2020). Although most COVID-19 patients are believed to have a favorable prognosis, older patients and those with chronic illnesses may face worse outcomes (Wu et al., 2020).

In addition to the physical consequences suffered by coronavirus patients, the outbreak caused by COVID-19 has led to a socioeconomic crisis with profound psychological anguish worldwide (Serafini et al., 2020). Patients infected with COVID-19 develop psychological disorders

associated with the general situation (isolation, loss of income, loneliness, etc.) (Luchetti et al., 2020) and their medical situation (fear, uncertainty, anxiety, depression, post-traumatic stress) (Guo et al., 2020). People who did not become infected were able to take care of family and friends with the disease, some of whom may have died, causing feelings of helplessness, anxiety, trauma and fear (Ahorsu et al., 2020; Hacımusalar et al., 2020).

To assess the negative psychological consequences of the COVID 19 pandemic, numerous scales have been developed and validated to estimate the effects of the coronavirus crisis.

- **COVID Reaction Scales (COVID-RS):** Developed for the Spanish general population by Escolà-Gascón et al. (2020), it is designed to measure psychopathological reactions to the coronavirus crisis brought on by the pandemic. The 31 statements that the individuals must answer on a Likert-type scale ranging from 0 (completely disagree) to 4 (totally agree). The scale comprises items grouped into

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five dimensions: a) avoidant behaviors, b) disorganized behaviors, c) maladaptive information consumption, d) loneliness, and e) herd behavior.

- **Fear of COVID-19 Scale (FCV-19S):** This scale is developed by Ahorsu et al. (2020) as a unidimensional measure of general fear of COVID-19 through seven items that must be answered on a Likert-type scale, with five response options ranging from 1 (totally disagree) to 5 (totally agree). The developed scale has shown good psychometric properties among Spanish university students (Martínez-Lorca et al., 2020), confirming the validity of its structure and adequate internal consistency.
- **COVID Stress Scales (CSS):** Prepared by Taylor et al. (2020), CSS consists of 36 items distributed in five dimensions that estimate COVID-19-related distress: a) danger and contamination fears, b) fears about economic consequences, c) xenophobia, d) compulsive checking and reassurance seeking, and e) traumatic stress symptoms about COVID-19. The responses were measured using a 5-choice Likert response option ranging from 0 (not at all) to 4 (extremely).
- **Coronavirus Anxiety Scale (CAS):** This scale was designed by Lee (2020) for the estimation of anxiety related to COVID-19 through five items that estimate the frequency with which individuals have experienced symptoms of anxiety, with a particular predominance of physical symptoms. The scale was specially designed for health professionals to efficiently and effectively detect cases of dysfunctional anxiety related to the COVID-19 crisis. This self-report has been validated among Latino health-science students (Caycho-Rodríguez et al., 2021) with good psychometric characteristics.

As previously specified, the available scales assess psychopathological responses or coping styles of the coronavirus crisis (COVID-RS; Escolà-Gascón et al., 2020), general fear of COVID-19 (FCV-19S; Ahorsu et al., 2020), stress caused by the new situation (CSS; Taylor et al., 2020) and anxiety symptomatology caused by COVID-19 (CAS; Lee et al., 2020). Thus, these scales focus on the study of COVID-19 from a pathological or dysfunctional point of view, ignoring the population, who, without suffering from pathologies related to the pandemic, have seen their lives getting affected and thereby increasing their concern about getting infected with the virus.

Concern about COVID have not been specifically assessed on these scales, despite the fact that existing literature has already demonstrated the difference between anxiety and concern (Borkovec, 1985; Borkovec and Inz, 1990), pointing out that concern can increase anxiety but not the other way around (Gana et al., 2001).

From the rest of the variables already analyzed in other instruments, it can be established that stress is a state of disharmony that is counteracted by physiological and behavioral responses that aim to maintain homeostasis (Chrousos, 2009), with special importance to the emotional response caused by aversive stimuli (Lissek et al., 2005).

Lastly, with elevated levels of fear, individuals may not be rational when reacting to COVID-19 (Martínez-Lorca et al., 2020), but the difference with concern is that this last variable may increase protective behaviors such as washing hands regularly, staying away from crowded places, and wearing face masks (Liu, 2020).

In short, concern is a differential and central transdiagnostic variable for the development and maintenance of mental health problems that have already been shown to be a determining factor in the anxiety response during confinement in the pandemic situation (Baiano et al., 2020), where the those with the highest score in this trait have shown a significant increase in anxiety scores and specifically symptoms considered signals of cognitive dyscontrol.

To assess this construct, the COVID-19 Concern Scale (EPCov-19; Ruiz Mamani et al., 2020) is composed of six items that assess concern about the contagion of COVID-19 and the impact that this concern may have on people's daily functioning, specifically in their state of mind and ability to carry out daily activities. An exploratory analysis was performed with a sample size of 224 participants to examine the

psychometric properties of this self-report. With a matrix of polychoric correlations, values higher than the standard were obtained for all six items, and reliability was acceptable (Cronbach's alpha coefficient = 0.866; 95% CI = 0.83–0.89). Parallel analysis showed unidimensionality of the scale (variance explained = 79.7% and saturations were higher than 0.4).

The existing literature has found that this concern is understood as an apprehensive expectation about real-life concerns such as health (Barlow, 2002), which plays a fundamental role at such a critical moment as a global health alert; it is the central characteristic of generalized anxiety disorder (GAD) (American Psychiatric Association, 2013) and is associated with psychopathology such as depressive rumination (Watkins et al., 2005) and obsessive-compulsive disorder (Goodwin et al., 2017). As a subjective trait without reaching clinical levels, excessive concern is associated with somatic health problems (Brosschot and van der Doef, 2006), contributing significantly to the severity of psychological responses to traumatic events and stressors (Spinhoven et al., 2015), and should be considered as a relevant variable for a clinical intervention designed to mitigate the psychological effects of the pandemic.

This study had two objectives: first, to analyze the psychometric properties that the COVID-19 Concern Scale presents in the Spanish population, and second, to estimate the level of concern, both in general and specifically, about COVID-19 contagion, which the Spanish population presents a year after the outbreak of the pandemic in Spain.

We hypothesized that the COVID-19 Concern Scale (EPCov-19) would reliably estimate the concern of COVID-19 infection in the general population, regardless of whether they have had COVID with anteriority.

Furthermore, it is expected to observe a concurrent validity of the scale with an instrument already validated for the estimation of concern in general, the Pennsylvania Worry Inventory (PSWQ), thus allowing for the validation of a specific instrument for the estimation of concern about contagion by COVID-19.

Lastly, despite the vaccination of the population and the relaxation of confinement measures, it is expected to obtain high rates of anxiety in general, thereby indicating the presence of generalized anxiety disorders, particularly among the population, thus indicating the emotional impact of the COVID-19 pandemic that can be seen one year later since it begins.

2. Method

2.1. Participants

The study sample was composed of 502 adults aged between 18 and 74 years ($M = 39.28$, $SD = 12.20$), of which, 130 (25.9%) were men and 370 (73.7%) women, and two of the participants were not chosen to provide this gender information.

2.2. Instruments

The participants were asked to provide information on age, sex, and marital status, as well as whether they had suffered from COVID-19 and had received the vaccination. Subsequently, they completed the following questionnaires:

In the COVID-19 Concern Scale (Escala de preocupación por la COVID-19, EPCov-19; Ruiz Mamani et al., 2020), six items presented four Likert-type response options (from 1 = *never or rarely* to 4 = *almost all the time*), where higher scores indicated more frequent concern about contagion.

The Pennsylvania Worry Inventory (PSWQ; Meyer et al., 1990) assesses the people's general tendency to worry. It consists of 16 items, which are evaluated using interval scales (from 1, "not at all," to 5, "a lot"; score range = 16–80).

2.3. Procedure

To collect data, the questionnaires were digitized using the Google Forms application. Instructions regarding the objectives of the research, the research team, and the data protection compliance clause were included on the main page of the questionnaire. It was mandatory for the participants to show their agreement with the objectives pursued by the research and with the confidential treatment of the answers provided, as well as providing their informed consent so that they could access the questions.

No personal data were collected that would allow the identification of the participants, and the study design was approved by the ethics committee of the university to which the researchers belong. Compliance with the recommendations of the Declaration of Helsinki was maintained.

The survey was distributed (in a non-probabilistic sampling approach) through the university's website, social networks, mailing, and professional and personal profiles of the participating researchers. Data were collected during the months of March and April 2021, a year after the government declared a state of alarm due to the rapid expansion of the COVID-19 pandemic in Spain, and measures to restrict mobility and confinement were imposed.

This research did not receive any specific grants from funding agencies in the public, commercial, or not-for-profit sectors.

2.4. Data analysis

Missing values were not found in the self-reported scales as all the questions were mandatory. Initially, descriptive statistics were calculated before conducting confirmatory factor analysis (CFA). The estimation method used was unweighted least squares (ULS) adjusted for the ordinal nature and non-normal distribution of the studied variables (Flora and Curran, 2004; Morata-Ramírez et al., 2015). The following indices were used to evaluate the adjustment value of the model: goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square residual index (RMR), normed fit index (NFI), and relative fit index (RFI). In accordance with Kline (2016), values show a good model fit if $RMR < 0.06$ and $GFI, AGFI, NFI, \text{ and } RFI > 0.90$. Thereafter, the internal consistency was assessed across Cronbach's alpha coefficients, as well as convergent validity, with correlational analysis to assess the association between both instruments. Finally, for comparisons between subsamples, mean difference analysis was performed (Student's *t*-test and Pearson's χ^2).

The software used to calculate descriptive data and internal consistency were SPSS Statistics (v.25, IBM) and AMOS (v.23, IBM) was used for CFA.

3. Results

3.1. Instrument global reliability analysis

The global reliability analysis of the instrument shows good reliability on a global scale ($\alpha = 0.883$), without the elimination of any of the items that improved the results.

The reliability of the instrument is maintained if the results obtained through the responses of participants who have suffered from COVID-19 ($\alpha = 0.896$) and when the responses were obtained through those who had not suffered the disease were analyzed separately ($\alpha = 0.888$), thus corroborating that the instrument is reliable in both contexts.

3.2. Confirmatory factor analysis

Confirmatory factor analysis confirmed the one-dimensional structure of the scale observed in the original validation of the instrument in the Peruvian population (Caycho-Rodríguez et al., 2021), with optimal fit results for all indices obtained ($RMR = 0.02$; $GFI = 0.998$; $AGFI =$

0.995 ; $NFI = 0.997$; $RFI = 0.994$). The factorial weights of the items that make up the scale exceed 0.65, ranging from 0.69 to 0.86 (see Fig. 1).

3.3. Convergent validity

To check the convergent validity of the COVID-19 Concern Scale (Escala de preocupación por la COVID-19), EPCov-19 in Spain, the PSWQ (Meyer et al., 1990) has been used, which, without the specific context of the pandemic, helped to assess the general tendency to worry (worry-trait).

Pearson correlation analyses indicated a global association between both scales, which can be considered statistically significant ($r = 0.368$; $p < .01$). A detailed analysis of the items of both instruments shows that, the more the mood is affected during the last week due to the possibility of being COVID-infected (EPCov-192), the higher the score with the items from the Pennsylvania Concern Inventory (PSWQ), specifically with those who indicate the intensity with which worries regarding the pandemic overwhelm them (PSWQ2) ($r = 0.340$; $p < .01$); the statement that there are circumstances that cause them to worry (PSWQ4) ($r = 0.349$; $p < .01$); the indication that they know they should not worry about things, but they cannot help it (PSWQ5) ($r = 0.324$; $p < .01$); the statement that they care about everything (PSWQ10) ($r = 0.351$; $p < .01$); argue that even if there is nothing else that can be done about something, they continue to worry about it (PSWQ11) ($r = 0.333$; $p < .01$), which implies that they are worrying about something all the time (PSWQ15) ($r = 0.300$; $p < .01$).

In addition to a greater effect on mood, the frequency of concern about the possibility of being infected with coronavirus (EPCov-195) significantly correlates with the statement that they worry about everything (PSWQ10) ($r = 0.330$; $p < .01$) and the assertion that they realize that they are always worrying about things (PSWQ13) ($r = 0.304$; $p < .01$), indicating that the participant's concerns at the present time include concerns about the possibility of being infected with coronavirus.

Finally, it should be noted that the greater the consideration of coronavirus infection as an important problem for the individual (EPCov-195), the higher the score that indicates that they know that they should not worry about things, but they cannot avoid it (PSWQ5) ($r = 0.309$; $p < .01$).

3.4. Descriptive analysis

It was observed that the mean age of the sample obtained was 40 years ($M = 39.92$), and men had a higher mean age than women (42.22 vs 38.27), this age difference can be considered to be statistically significant ($t(498) = 3.199$; $p < .01$). Approximately 20% of the sample (19.7%) claimed to have suffered from the disease, with a significantly higher incidence in women than in men (21.4% vs. 15.4%) ($\chi^2(1) = 184.096$; $p < .01$).

Similarly, only 11.2% of the participants had been vaccinated against COVID-19; a higher vaccination rate was observed among women than among men (12% of women were vaccinated compared to 8.8% of men) ($\chi^2(1) = 214.927$; $p < .01$).

Regarding the general scores obtained on the COVID-19 Concern Scale (Escala de preocupación por la COVID-19, EPCov-19), the participants affirmed to a greater extent that they felt worried about the possibility of being infected with coronavirus (EPCov-194) ($M = 2.50$), increasing the frequency with which this possibility worries them throughout the week (EPCov-195) ($M = 2.14$), and considering that being infected with coronavirus is a crucial problem (EPCov-196) ($M = 2.14$).

The increase in the scores obtained in the previous statements occurs to a greater extent among those who have suffered from COVID-19 compared to those who have not, without the said differences having the intensity necessary to be considered as significant and with an effect size that does not reach the necessary magnitude to be considered

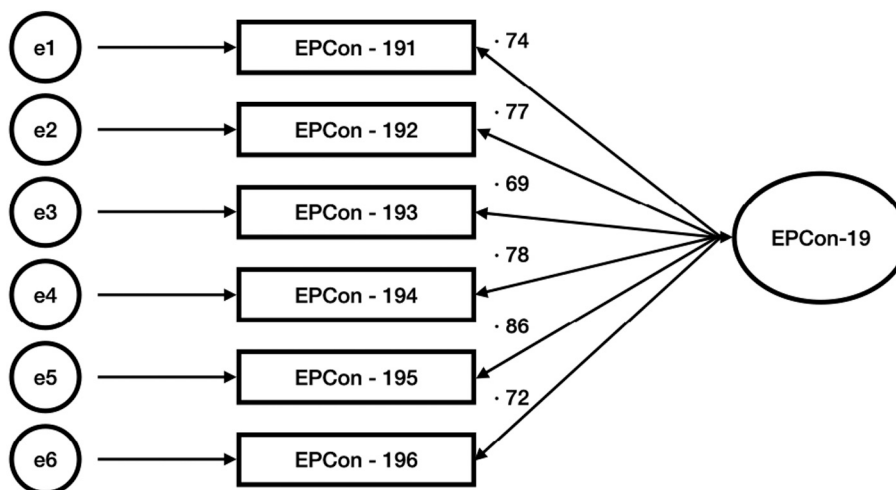


Fig. 1. Confirmatory factor analysis of the instrument.

insignificant (see Table 1).

Considering the gender of the participants, a higher overall score for women was observed in all the items that make up the scale, with significant differences in the statements that indicated greater concern about the possibility of being infected with coronavirus (EPCov-194) ($t(498) = -2.395; p < .05; d = -.18$), and the frequency of the possibility of the infection (EPCov-195) ($t(498) = -2.939; p < .01; d = -.25$) (see Table 2).

The results obtained in the PSWQ (Meyer et al., 1990) show a high score for the items that collect a general concern for things (PSWQ3), the statement that their concern increases if they do not have enough time to do everything (PSWQ1), increased worry when stressed (PSWQ6), and overwhelmed by worry (PSWQ2). Having suffered from COVID-19 induces general concern (PSWQ3) ($t(500) = -3.073; p < .01; d = -.39$), and increased concern about the lack of time to do everything (PSWQ1) ($t(500) = -2.540; p < .05; d = -.30$), and where participants who were COVID patients scored higher than those who had not been infected (see Table 3).

In the instrument, if we analyze the differences based on gender, it is

Table 1

Descriptive results of the COVID-19 concern scale, subjected to if they have or have not been infected with COVID-19.

	General		COVID patient		Not COVID patient		t-Test
	M	SD	M	SD	M	SD	
EPCov-191	2.01	0.870	1.80	0.876	2.04	0.043	$t(465) = -2.099; p < .05$
EPCov-192	1.74	0.830	1.61	0.769	1.74	0.820	$t(465) = -1.202; p = .230$
EPCov-193	1.63	0.830	1.56	0.833	1.63	0.820	$t(465) = -0.568; p = .570$
EPCov-194	2.50	0.752	2.49	0.780	2.51	0.753	$t(465) = -0.126; p = .900$
EPCov-195	2.14	0.838	2.19	0.753	2.13	0.818	$t(465) = 0.033; p = .633$
EPCov-196	2.14	0.942	2.08	0.822	2.14	0.962	$t(465) = -0.479; p = .632$
EPCov-19Mean	2.02	0.670	1.95	0.675	2.03	0.669	$t(465) = -0.859; p = .391$

Note. Mean (M). Standard Deviation (SD).

Table 2

Descriptive results of the COVID-19 concern scale, subjected to gender.

	General		Male		Female		t-Test
	M	SD	M	SD	M	SD	
EPCov-191	2.01	0.870	1.94	0.869	2.01	0.870	$t(498) = -1.120; p = .263$
EPCov-192	1.74	0.830	1.61	0.792	1.79	0.840	$t(498) = -2.119; p < .05$
EPCov-193	1.63	0.830	1.60	0.764	1.64	0.854	$t(498) = -0.478; p = .633$
EPCov-194	2.50	0.752	2.36	0.715	2.54	0.754	$t(498) = -2.419; p < .05$
EPCov-195	2.14	0.838	1.95	0.786	2.20	0.846	$t(498) = -2.939; p < .01$
EPCov-196	2.14	0.942	2.04	0.927	2.18	0.947	$t(498) = -1.485; p = .138$
EPCov-19Mean	2.02	0.67	1.91	0.054	2.07	0.035	$t(498) = -2.185; p < .05$

Note. Mean (M); Standard Deviation (SD).

women who score higher on practically all the items that make up the questionnaire, especially in the statements that indicate that they are overwhelmed by worries (PSWQ2) ($t(498) = -4.727; p < .01; d = -.55$), and the assessment that they realize that they should not worry about things, but are helpless in this aspect (PSWQ5) ($t(498) = -4.367; p < .01; d = -.53$) (see Table 4).

In addition to the descriptive results obtained from the Penn State Worry Questionnaire (PSWQ), its diagnostic capacity for the detection of anxiety disorders, especially generalized anxiety disorders (GAD), allows the estimation of the incidence of said disorders in the study population based on the age ranges of the studies conducted so far (González et al., 2007).

The results indicated that almost 40% (39.8%) of the sample would meet the diagnostic requirements for an anxiety disorder, while more than 20% (21.5%) would suffer from the symptoms of a generalized anxiety disorder. Based on the obtained sociodemographic data, a higher incidence of anxiety disorders was observed among women ($X^2(2) = 31.665; p < .01; \nu = 0.14$) and adults who did not suffer from COVID-19 ($X^2(1) = 184.096; p < .01; \nu = 0.20$), which constituted the group at risk of suffering from this ailment (see Table 5).

Table 3
Descriptive results of the Penn State Worry Questionnaire (PSWQ), subjected to if they have or have not been infected with COVID-19.

	General		COVID patient		Not COVID patient		t-Test
	M	SD	M	SD	M	SD	
PSWQ1	3.36	1.16	3.44	1.15	3.04	1.17	$t(465) = -2.107$; $p < .05$
PSWQ2	3.25	1.17	3.28	1.17	3.10	1.19	$t(465) = -1.001$; $p = .317$
PSWQ3	3.43	1.07	3.49	1.07	3.18	1.07	$t(465) = -1.210$; $p = .227$
PSWQ4	3.15	1.12	3.19	1.10	2.98	1.20	$t(465) = -0.878$; $p = .381$
PSWQ5	3.18	1.22	3.19	1.18	3.13	1.36	$t(465) = 0.378$; $p = .706$
PSWQ6	3.30	1.16	3.33	1.12	3.18	1.30	$t(465) = -0.230$; $p = .818$
PSWQ7	2.75	1.24	2.77	1.22	2.66	1.33	$t(465) = 0.072$; $p = .974$
PSWQ8	3.02	1.21	3.03	1.19	2.98	1.31	$t(465) = -0.504$; $p = .614$
PSWQ9	2.90	1.25	2.95	1.26	2.73	1.23	$t(465) = -0.602$; $p = .548$
PSWQ10	2.39	1.30	2.39	1.31	2.39	1.27	$t(465) = 0.523$; $p = .601$
PSWQ11	2.55	1.22	2.54	1.21	2.61	1.25	$t(465) = 0.828$; $p = .408$
PSWQ12	2.18	1.18	2.20	1.19	2.11	1.17	$t(465) = 0.141$; $p = .888$
PSWQ13	2.61	1.29	2.60	1.30	2.62	1.27	$t(465) = 0.570$; $p = .569$
PSWQ14	2.59	1.24	2.60	1.23	2.55	1.27	$t(465) = 0.362$; $p = .717$
PSWQ15	2.28	1.25	2.32	1.27	2.14	1.13	$t(465) = -0.228$; $p = .819$
PSWQ16	3.32	1.16	3.36	1.18	3.14	1.09	$t(465) = -1.304$; $p = .193$
PSWQMEAN	2.89	0.96	2.87	0.99	2.92	0.95	$t(465) = -0.373$; $p = .709$

Note: * $p < .05$; ** $p < .01$.

Table 4
Descriptive results of Penn State Worry Questionnaire (PSWQ), subjected to gender.

	Male		Female		t-Test
	M	SD	M	SD	
PSWQ1**	3.11	1.17	3.45	1.14	$t(498) = -2.943$; $p < .01$
PSWQ2**	2.83	1.09	3.39	1.17	$t(498) = -4.727$; $p < .01$
PSWQ3**	3.19	1.03	3.51	1.08	$t(498) = -2.899$; $p < .01$
PSWQ4*	2.95	1.07	3.22	1.14	$t(498) = -2.432$; $p < .05$
PSWQ5**	2.78	1.14	3.32	1.21	$t(498) = -4.367$; $p < .01$
PSWQ6**	2.98	1.14	3.42	1.14	$t(498) = -3.717$; $p < .01$
PSWQ7*	2.55	1.17	2.82	1.26	$t(498) = -2.095$; $p < .05$
PSWQ8*	2.80	1.17	3.10	1.22	$t(498) = -2.403$; $p < .05$
PSWQ9*	2.67	1.57	2.99	1.27	$t(498) = -2.516$; $p < .05$
PSWQ10**	2.08	1.10	2.51	1.36	$t(498) = -3.184$; $p < .01$
PSWQ11**	2.27	1.12	2.65	1.24	$t(498) = -3.074$; $p < .01$
PSWQ12**	1.95	0.96	2.26	1.24	$t(498) = -2.629$; $p < .01$
PSWQ13	2.44	1.17	2.66	1.32	$t(498) = -1.726$; $p = .085$
PSWQ14*	2.40	1.14	2.65	1.27	$t(498) = -1.991$; $p < .05$
PSWQ15*	2.09	1.10	2.35	1.29	$t(498) = -2.060$; $p < .05$
PSWQ16	3.22	1.04	3.35	1.21	$t(498) = -1.144$; $p = .253$
PSWQMEAN	2.65	0.84	2.98	0.99	$t(498) = -3.443$; $p < .01$

4. Discussion

The results obtained from the analysis support the good psychometric properties of the COVID-19 Concern Scale (Escala de preocupación por la COVID-19, EPCov-19) in the Spanish population; the results are aligned with that obtained in the initial validation of the instrument in the Peruvian population. The convergent validity was

observed when the results obtained in the COVID-19 Concern Scale (Escala de preocupación por la COVID-19, EPCov-19) and the Pennsylvania Worry Inventory (PSWQ) affirmed that the scale has a good capacity for the diagnosis of concern about the pandemic, allowing it to be used as a screening instrument given its specificity and short application.

Studies indicate that crisis situations, such as the ongoing pandemic, have a negative impact on the mental health of individuals (Kang et al., 2020; Mukhtar, 2020), with an observed increase in the incidence of anxiety disorders in countries such as Spain (Rodríguez-Rey et al., 2020), Italy (Mencacci and Salvi, 2021), the United States (Jacobson et al., 2020) and Australia (Stanton et al., 2020) during the periods of confinement and restrictions on social contact that were imposed during 2020.

Existing studies indicate that the period between March and April 2020 is the time when the general world population experienced greater psychological discomfort, specifically feelings of isolation, uncertainty, depression, reactions of stress, generalized anxiety, and fear of the virus (Balkhi et al., 2020; Liu et al., 2020), coinciding with the strict public health measures implemented worldwide to contain the spread of the virus (Roser et al., 2020).

Although the aforementioned studies indicate an increase in anxiety-related disorders during periods of restriction and confinement due to the pandemic, until now, the present symptomatology has not been analyzed once the restriction measures have ended and the population has been allowed to interact normally, which is the major novelty provided by the current research and differentiates it from the analysis of the results of prior studies.

In addition to the estimation of symptoms in the so-called “new normality,” where the fear of contacts and the possibility of contagion are more likely than during the period of home restriction, another novelty of the study is the specific concern about the pandemic, a construct different from that measured by the authors mentioned before in prior studies. This concern towards the pandemic, unlike the rest of psychological constructs studied so far, is the responsible for the population increase in active protective behaviors against the contagion, such as washing hands regularly, staying away from crowded places, and wearing face masks (Liu, 2020).

At the end of the critical period of the pandemic, and with treatment and vaccination measures for the population, this study allowed us to understand if the concern about contagion by COVID 19 continues to occur, to be able to take prevention and intervention measures with the concerned population to help prevent an increase in psychopathology.

After a year, the results indicated that the majority of the population continues to present levels of anxiety considered to be pathological or dysfunctional, complying with the forecasts that the psychological anguish caused by the pandemic would exceed the number of people infected by it (Colizzi et al., 2020; Grover et al., 2020), confirming that fear and concern about the coronavirus would explain the psychological discomfort of the population above sociodemographic variables, personality, or, as in this case, by variables related to the disease itself (Lee et al., 2020; Lee and Crunk, 2020).

In line with numerous studies conducted to date (Badahdah et al., 2020; Fernández et al., 2020; Qiu et al., 2020), the results indicate that women face a greater fear of contagion than men, and should be considered as a risk group for the possible psychological consequences of the COVID-19 pandemic.

The relationship observed between anxiety caused by pandemic, or fear of contagion, and the compulsions to wash hands and sanitize, characteristic symptoms of obsessive-compulsive disorder (OCD) (Brand et al., 2013), justifies a specific intervention that avoids the emergence of psychiatric disorders that, if they reach considerable severity, can be disabling (American Psychiatric Association, 2013).

Once the spread of the virus has been controlled and vaccination plans have begun in different countries, the intervention of health professionals and those responsible for health management should aim at

Table 5

Percentage of the sample with scores indicative of anxiety disorders and generalized anxiety disorder.

	Total		Male		Female		COVID patient		Not COVID patient	
	N	%	N	%	N	%	N	%	N	%
No anxiety disorders	194	38.6	61	46.9	132	35.7	42	42.4	152	37.7
Nonspecific anxiety disorders	200	39.8	54	41.5	145	39.2	40	40.4	160	39.7
Generalized anxiety disorder	108	21.5	15	11.5	93	25.1	17	17.2	91	22.6

providing psychological and mental health support. These programs should be provided not only to people with suspicion or confirmation of COVID-19, but also to the general population, and especially to women, following the recommendations of the World Health Organization that establish psychological and social care such as the “nucleus of clinical intervention,” that guarantees the emotional well-being of the population and reduces the negative impact in the medium and long term of the pandemic on mental health (WHO, 2021).

4.1. Strengths and limitations

Most notably, this study's results are based on cross-sectional data, which provide a snapshot of the current mental health of the Spanish population but are limited in their ability to provide long-term conclusions regarding the impact of COVID-19. Furthermore, the nature of self-reported mental health data implies a symptom level and does not replace clinical diagnosis.

Participants were not limited to a specific area of residence, which, considering the nature of the pandemic, may influence their experiences related to the health measures they have to take. Similarly, the severity of the symptoms experienced by COVID-19 patients has not been considered, exclusively requesting information on whether or not they have suffered from the disease.

Finally, the use of mental health services prior to the COVID-19 restrictions and anxiety levels prior to the pandemic were not assessed; therefore, no comparisons between the two time points could be made.

Despite these limitations, this study provides significant insight into the anxiety symptoms of the Spanish population one year into the COVID-19 pandemic, showing that the pandemic has not only physically affected COVID-19 patients, but also modified mental health in the general population.

Author contributions

All authors have participated in (a) conception and design, or analysis and interpretation of the data; (b) drafting the article or revising it critically for important intellectual content; and (c) approval of the final version. This manuscript has not been submitted to, nor is under review at, another journal or other publishing venue.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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