

RESEARCH ARTICLE

Stressors and uplifts of confinement due to covid-19: A longitudinal study on mental health in a sample of academic and administrative university staff in Spain

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Abstract

The rapid spread of COVID-19 caused many countries to decide to enter full lockdown, a circumstance that impacted all aspects of life, including mental health. The present longitudinal study aimed to analyse how stressors and uplifts of confinement were linked to psychological symptoms at three different time points: during the full lockdown (wave 1), after the gradual lifting of restrictions (wave 2) and after confinement (wave 3). The sample was made up by one hundred and twenty academic and administrative staff from a big University in Spain, they all completed an online survey. Results showed that psychological status did not change over time, but a significant interindividual variability was found throughout. Some stressors were only linked to symptoms at wave 1, but others maintained their associations during waves 2 and 3. Uplifts were, for the most part, inversely (and exclusively) linked to symptoms at wave 1. However, some of them, although enjoyable, were paradoxically linked to worse mental health at wave 1, and even at waves 2 and 3. These findings highlight the importance of providing preventive psychological strategies for mental distress before, during and after confinement.

KEYWORDS

COVID-19, lockdown, mental health, stress

1 | INTRODUCTION

The unpredictable and fast spreading infectious nature of Coronavirus (COVID-19) caused increased universal awareness, anxiety and distress, all of which, according to the WHO (Khan & Cheng, 2020; World Health Organization, 2020), are natural psychological responses to randomly changing conditions. Vast segments of the World's population were restricted to their homes during the year 2020, owing to nationwide lockdowns and at home-confinement

strategies implemented by the majority of the COVID-19-hit countries to prevent further disease transmission (Pulla, 2020; Rubin & Wessely, 2020; Sohrabi et al., 2020). In Spain, after 5753 cases were confirmed and 136 deaths, a lockdown was enforced on 15 March 2020, for 48 days (Shah & Farrow, 2020; World Health Organization, 2020). This involved the confinement of everyone except essential workers (Ruiz-Fernández et al., 2020), face-to-face classes were suspended, and consequently, online teaching was introduced. This circumstance could be especially disruptive in Spain, as at that time it

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was actively involved in a cultural change following the guidelines of Bologna Declaration (Marquand & Scott, 2018; Neave, 2003). Bologna Declaration implies, among others, the development of a teaching methodology in which not only knowledge is transmitted to students, but also skills and attitudes (Wächter, 2004), and seeking an active and continuous learning of students, with acquisition of competences as the cornerstone (D'Ascanio, 2017).

Confinement is an anomalous situation that forces people to modify their everyday life habits and daily routines (Girdhar et al., 2020). Suddenly, normal activity comes to a halt, and even in cases where it is possible to continue with work, people must modify their behaviours. People experience an extremely stressful and novel living situation, one which impacts each person in different ways, undoubtedly leading to psychological consequences in the mid and long terms (Holmes et al., 2020). Previous studies have shown that confinement, the loss of contact with others, and the inability to follow normal routines produce boredom, frustration, and a sense of isolation from the rest of the world, therefore generating anxiety, depression and restlessness in people undergoing lockdown (Reynolds et al., 2008; Braunack-Mayer et al., 2013; Wilken et al., 2017). Specifically, the implementation of lockdown due to COVID-19 had a profound impact on mental health (Gruber et al., 2020).

Numerous studies have been carried out to identify how lockdown impacted health, aiming at identifying possible relationships between psychosocial, psychological and behavioural changes (e.g. lifestyle habits) during confinement (Adams-Prassl et al., 2022; Butterworth, 2022; Hasannia et al., 2021; Msherghi et al., 2021; Odone et al., 2020; Olashore et al., 2021; Rajabimajd et al., 2021). Derived from this aim, studies found that, although most people were not expected to suffer mental disorders, a significant percentage of the population experienced intense emotional adjustment reactions (Guan et al., 2020). For example, it has been shown that perceived loss of control, feelings of being trapped (Brooks et al., 2020) and enforced isolation, amongst other factors, had a significant impact on many aspects of people's lives, generating substantial psychological stress (Brooks et al., 2020; Mazza et al., 2020). Moreover, the large and rapid increase in the confirmed numbers of cases and deaths caused medical personnel and the general population to experience high levels of anxiety and depressive symptoms as the main psychological health problems, specifically during the first week of government-imposed quarantine (Hyland et al., 2020; Kang et al., 2020; Odriozola-Gonzalez et al., 2020). In this sense, some COVID-19 specific factors have emerged as the main ones associated to poorer mental health, including duration of the quarantine, knowing someone infected with COVID-19, direct exposure to COVID-19, being at a high risk of being infected, fear of infection, frustration, boredom, inadequate information, lack of basic provisions, economic losses, stigma, working outside of the home, or being under a stay-at-home order (Brooks et al., 2020; Mazza et al., 2020; Tull et al., 2020).

The long-established differentiation between stressors as internal (thoughts and feelings, only partially linked to objective sources such as, for example, unrealistic expectations or negative self-talk) or

external (major demands, as well as daily disruptive and frustrating events resulting from the direct interaction with the environment), may help to improve insight into this context (Lazarus & Folkman, 1984). Even more, Lazarus and his colleagues (1981), in their cognitive appraisal theory, regarding external stressors, highlight the role both of relatively minor stresses, as well as the pleasures that characterise everyday life: daily hassles and uplifts (Lazarus, 1980). Daily hassles are defined as minor, but irritating, day-to-day events that can, somehow, irritate, frustrate and/or distress people (Lazarus & Folkman, 1984). As, according to the theory of Lazarus and Folkman, individuals cognitively evaluate or appraise environmental events in relation to their own person-related characteristics, and this evaluation will determine the type and quality of the emotional response to the event, many hassles originate because of the individual's environment, their personal behaviour patterns, or their interaction. On the other hand, daily uplifts encompass experiences or conditions of daily life that are appraised as positive or favourable to an individual's well-being (Lazarus, 1980). These daily events are conceived as daily positive experiences such as the joy derived from manifestations of love, sharing social experiences, receiving good news, or having success, among many others (Kanner et al., 1981).

In the recent literature on stress during the COVID-19 pandemic the focus has been largely on the identification of external stressors. In this sense, studies carried out among Spanish population have shown severe stressors associated with increased prevalence of emotional distress during the confinement due to COVID-19. For example, one study found that between 25% and 39% of a sample of 1781 Spanish adults presented clinically significant levels of distress, suggesting that certain variables such as a history of psychopathology, being female or younger, were all associated with higher distress (Pérez et al., 2021). Other studies in a similar population have found that the more time exposed to news about COVID-19, more contact with relatives other than those they live with, lower sleep quality, greater loneliness, being affected or having a close relative affected by the virus, living alone or in a flat, and changes in working habits were associated with greater psychopathology and higher distress (González-Sanguino et al., 2020; Losada-Baltar et al., 2022). Specifically, among university staff, many Spanish universities also went through a period of working-from-home during the confinement due to COVID-19, certain studies have found that this was associated with moderate to extremely severe scores for anxiety, depression, and stress reported by academic and administrative staff (Odriozola-González et al., 2020; Rodríguez-Nogueira et al., 2021).

It has been suggested that teachers have been especially vulnerable to the impact of COVID-19 lockdown (Chen et al., 2022; Yi et al., 2021), including development of posttraumatic stress disorder (PTSD) (Kukreti et al., 2021), due to the transition from classroom to home-based teaching in record time (Aperribai et al., 2020). This transition required more intensive demands for designing, conducting, and evaluating learning online, as well as communicating with stakeholders (Kaden, 2020; Khanal et al., 2021; Nilson & Goodson, 2021), that resulted in extensive periods of

Internet use (Aperribai et al., 2020; Fauzi & Khusuma, 2020; Zheng & Song, 2020) and passive exposure to information related to the pandemic, via both the media and social media (Gao et al., 2020; Rodríguez-Hidalgo et al., 2020). In addition, although there is no direct evidence showing that teachers actively sought more information concerning covid-19 during confinement, several studies have noted that teachers felt a higher degree of uncertainty about the development of the pandemic, because they were very eager to know until when they would have to continue home-based teaching (Eşici et al., 2021; Khanal et al., 2021). Presumably, at the same time this uncertainty elicited searching for threatening information concerning covid-19 (Huang et al., 2020; Superio et al., 2021) and, consequently, to the development of fear and possible PTSD (Chen et al., 2022; Kukreti et al., 2021; Li, 2021; Yi et al., 2021).

Although the above-mentioned results were restricted to non-university teachers, they presumably could be extended to university academic staff, and also to the administrative staff, considering their increase of time spent in communicating with stakeholders. This is still to be researched. Furthermore, to the best of our knowledge, the daily activities and situations that resulted in positive experiences for individuals in general, and for academic and administrative personnel in particular, during confinement and how they impacted mental health, are yet to be explored.

Measured along with stressors, uplifts have proven to be strong predictors of well-being and health-related outcomes (DeLongis et al., 1982; Eklund et al., 2022; Kanner et al., 1981; Maybery & Graham, 2001; Pinguart & Sörensen, 2004). Nonetheless, few studies have focussed on uplifts during COVID-19. For example, a study carried out among female university staff that had chronic pain problems (Rodríguez-Nogueira et al., 2021) showed that, for example, the frequency and the type of physical activity (preference for strength training and stretching exercises) carried out increased significantly during the period of confinement. In another study with Swedish participants after confinement, social interactions, in real life or digitally, with family, friends and others, and leisure and recreation activities, such as hobbies and physical exercise emerged as the primary sources of satisfaction (Eklund et al., 2022). Inspired by these results, the current study aimed to address the question of how different stressors and uplifts affected university staff during the lockdown period, from a longitudinal perspective, taking into account 3 weeks after confinement began (by 25 April 2020) (Casabona & Mora, 2020). Specifically, the study focussed on the impact of quarantine on the psychological functioning of a sample of academic and administrative staff at a big University in Spain, when total lockdown was declared, under the hypothesis that some stressors and uplifts present during confinement would be linked to a better or worse evolution of mental health over time. In this way, first, differences in psychological status between individuals from the university staff over the confinement period were analysed. Secondly, considering their subjective significance for the sample, we also examined which specific internal stressors, external stressors and uplifts of confinement were linked to mental health during and after confinement among university staff.

2 | METHOD

2.1 | Setting and study design

A longitudinal survey targeting academic and administrative staff at the Rey Juan Carlos University was conducted. Data collection started at the height of full confinement due to the COVID-19 pandemic in Spain (wave 1) between April 20th to May 5th of 2020 (4 weeks after the onset of confinement), and followed by a second wave 4 weeks later (wave 2, corresponding to Phase 1 of de-escalation) between June 2nd and June 17th. Finally, a third wave (wave 3, corresponding to 'new normality') occurred 3 weeks after wave 2, between July 7th and July 22nd. During phase 1 of de-escalation (wave 2), citizens were allowed to leave their residences between 06:00 AM and 23:00 PM, three separate time slots were assigned to people depending on their age group and meetings of 10 people maximum were allowed, as long as they were using a mask. Regarding work, companies opted for working from home. During the phase of 'new normality' (wave 3), there was a compulsory mask mandate and people had to maintain a safety distance of 1.5 m both in open and in enclosed spaces, although the time slot assigned for leaving the house and the limit of people allowed to meet were eliminated. Regarding work, most companies opted to maintain working from home, while for jobs requiring attendance companies had to implement the safety measures required by the Ministry of Health.

2.2 | Sample

The 3038 employees making up the target population were contacted, the online survey at wave 1 was completed by 515 of them. Of these, 174 participated in wave 2, and a final sample of 120 took part in all three waves. These participants ($n = 120$) represented 4% of the target population, assuming a confidence level of 95% with a heterogeneity level of 50% and a margin error of $\pm 9\%$. A flow chart of the participants who were included in the different waves of the study, which includes their demographic data, is shown in Figure 1. No statistically significant differences were found between the participants who were lost to follow-up and those who responded to the three waves of research in sociodemographic characteristics (age, gender, category, marital status, caring for children below the age of 12 years old, pre-existence of physical pathologies, space of confinement, and solitary vs. other forms of confinement), or any of the variables analysed (all $p > 0.05$), therefore finding no predictors of participation in the three waves.

The final sample of employees that participated in all three waves ($n = 120$) had an average mean age, at baseline (wave 1), of 45.79 years old (SD 10.08, range 25–63 years), 77 of them belonged to academic staff (64.20%) and 43 to administrative staff (35.80%), 76 were male (63.30%) and 43 were female (35.80%), most of them ($n = 99$, 82.50%) were married or lived with a partner. Regarding confinement conditions, 32 participants (26.7%) spent their confinement caring for children below the age of 12, 17 participants (14.20%) lived by themselves, and 18 (15%) were locked down in a

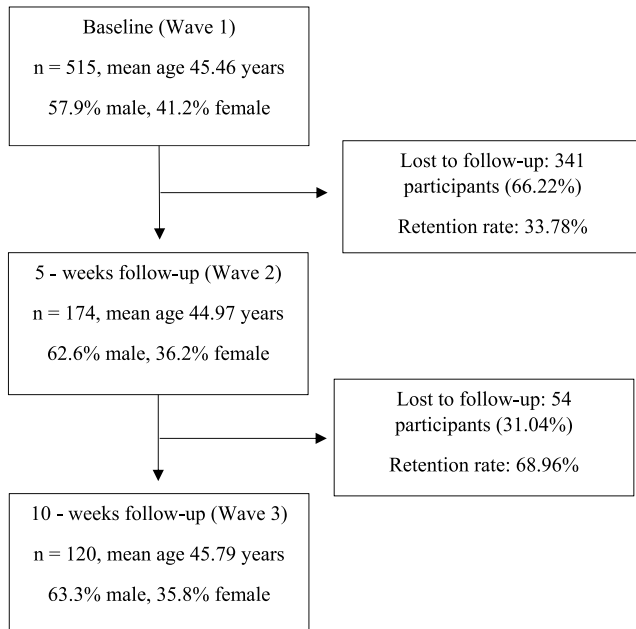


FIGURE 1 Flow chart of the number of participants at the different waves of the study

space smaller than 60 square metres (50% of homes in Spain had a space of living above 90 square metres during the pandemic, with only 13.64% of homes having a size of living below 60 square metres; INE, 2020). 11 participants (9.20%) had pre-existing physical ailments that were medically unattended because of confinement.

2.3 | Measures

Internal and external stressors and uplifts of confinement were taken from a list of 20 stressing events, 21 stressing thoughts and feelings, and 23 uplifts, frequent among people during lock-down (see Appendix 1). Several previous studies have aimed to identify the presence of stressors and uplifts linked to different life domains following a non-aggregated approach (Klusmann et al., 2020; Maybery & Graham, 2001). This significantly improves our understanding of the specific impact of these sources. In accordance with this approach, a new measure of stressors and uplifts had to be developed at the beginning of the pandemic due to the presence of COVID. The catalogue used in the current study was developed from a previous pilot sampling beginning 10 days after the onset of confinement. Fifteen voluntary participants representing the educational and administrative staff of the University (mean of age 48.13; SD 8.80), 10 male and 5 female, were incidentally contacted via e-mail among the University staff, and requested to list and describe the daily stressors or difficulties which were the most common to them during confinement. They were also requested to list the thoughts that were causing most discomfort, anxiety, nervousness, annoyance or distress, and the experiences and events that were being most satisfactory during confinement. An expert committee made up by five psychologists selected a total of 14 stressing events, 12 stressing

thoughts and feelings, and 13 uplifts, based on the repetition of stressors or on their potentially traumatic content. Items which were mentioned a minimum of two times were included, and as well as items representing real or subjective threats to the physical integrity of the individuals, or evoking reactions of intense fear, horror and/or helplessness. The final participants ($n = 120$), were asked to indicate, using a 4-point Likert scale, to what extent they were negatively affected by the stressors, and positively affected by uplifts.

Symptoms of somatisation, depression and anxiety were assessed using the Brief Symptom Inventory-18 (BSI-18; Derogatis, 2001), consisting of 18 items with a 5-point Likert-type scale, ranging from 0 (not at all) to 4 (extremely), where subjects rate the extent to which each symptom has bothered them in the last week. The scale provides an overall measure for each subscale (somatisation, depression, and anxiety) and the global severity index (GSI), higher scores indicate increased symptoms. The GSI score and the scores for each subscale are converted to *T*-scores, a participant is considered to have clinical levels of distress when obtaining a *T*-score ≥ 63 on the GSI or *T*-scores ≥ 63 on at least two subscales. The BSI-18 has good internal consistency, test-retest reliability and concurrent validity (Derogatis, 2001). For the present sample, Cronbach's alpha scores were 0.88 for the GSI, 0.76 for the somatisation and depression subscales, and 0.80 for the depression subscale.

Mental Well-Being was measured using the Warwick-Edinburgh Mental Well-being Scale (WEMWBS; Tennant et al., 2007), composed by 14 items with a 5-point Likert-type scale, ranging from 1 (None of the time) to 5 (All of the time), assessing both hedonic and eudaimonic aspects of mental health in the last two weeks. The scale yields a global score by adding the scores obtained on each item, scores range between 14 and 70 points, where higher scores indicate higher levels of mental well-being. The Spanish version shows adequate psychometric properties, among them a good internal consistency index (0.92), test-retest reliability (0.84) and good content validity (Tennant et al., 2007). Cronbach's alpha was found to be 0.94 for the present sample.

Post-traumatic symptoms were assessed using the Trauma Screening Questionnaire (TSQ; Brewin et al., 2002) consisting of 10 items with a dichotomous '0 = No or 1 = Yes' response format where respondents indicate whether or not they have experienced each symptom at least twice in the last week. The TSQ yields an overall score which is calculated by adding the scores for each item, scores range from 0 to 10. The scale includes a cut-off score of 6, indicating that subjects with scores ≥ 6 are likely to have a post-traumatic stress disorder (PTSD). The TSQ counts on good psychometric properties such as a high internal consistency index (0.85) and good validity with high sensitivity and specificity indexes (86% and 93%). For the present sample, KR-20 was 0.81.

2.4 | Procedure

The study was approved by the Rey Juan Carlos University Review Board. The 3038 employees were contacted via e-mail and invited to

participate in the study. The survey was administered using the Limesurvey 2.5 on-line survey application. To ensure anonymity, a personal code was built by each participant at wave 1. This code was used to trace survey responses at waves 2 and 3. Stressors (internal and external) and uplifts of confinement were assessed only at wave 1. Symptoms of somatisation, depression, anxiety, mental well-being, and post-traumatic symptoms were assessed in at all three temporal moments of the study (waves 1, 2 and 3). Answering the survey took approximately 15–20 min at wave 1, and 5–10 min at waves 2 and 3.

2.5 | Statistical analyses

Descriptive statistics (means and standard deviations) were used to determine psychological status (mental well-being, somatisation, anxiety, depression and PTSD symptoms) at different time points, as well as to know the impact of stressors and uplifts at wave 1. To explore whether psychological status changed over time, a repeated measures ANOVA was used.

After that, differences in psychological status at different time points, as a function of sociodemographic variables and confinement conditions (age, gender, category, caring for children below the age of 12 years old, pre-existence of physical pathologies, space of confinement, and solitary vs. other forms of confinement), were examined using a series of one-way multivariate analysis of variance (MANOVAs) to control for inflated type I error. These were followed by a series of one-way Analyses of Variance (ANOVAs) in which the previously detected differences, were proved to persist once significant sociodemographic variables and confinement conditions were entered in the analysis together. Resulting of these ANOVAs, those variables in which differences were observed at any temporal moment for any indicator of psychological status, were used as covariates in the subsequent regression analyses (when differences were observed only at wave 1) or multilevel analysis (when differences were observed at waves 1, 2 or 3), for that specific indicator (see below).

Next, to know if stressors and uplifts at wave 1 were related to psychological status at wave 1, multiple regression with enter method was employed. For any psychological status variable (mental well-being, somatisation, anxiety, depression and PTSD symptoms), three independent regression models were estimated using external stressors, internal stressors and uplifts separately as predictors, together with those sociodemographic variables and confinement conditions whose suitability for inclusion as covariables in this temporal moment have been previously confirmed as has been described above.

Moreover, to examine how stressors and uplifts at wave 1 predicted changes in psychological status at waves 2 and 3, multilevel modelling with restricted maximum likelihood (REML) estimation for repeated measures data was used, with potential covariates and time (wave 2 and wave 3) as fixed effects, and participants and time as random effects. Continuous variables were initially centred and subsequently standardized to facilitate interpretation. For any psychological status variable (mental well-being, somatisation, anxiety, depression, and PTSD symptoms), five models were estimated

including external stressors, internal stressors, or uplifts, separately as predictors, and as potential covariates wave 1 psychological status scores (Everitt, 1995), together with those sociodemographic variables and confinement conditions whose suitability for inclusion at waves 1, 2 and 3 had been previously confirmed (see above).

In this way, first, the distribution of the variance in that specific psychological status variable, across the different levels, was estimated and tested if differing significantly from zero using the Wald z-test (null model). Secondly, the wave 1 scores on that specific psychological status variable, along with the previously detected potential covariables (see above) were entered (model 1). Next, potential predictors (internal stressors, external stressors, or uplifts) were entered (model 2). Finally, time was entered (model 3), followed by the interaction between group and time (model 4). Model 2 was aimed at testing predictors of psychological change at wave 2, and model 4 was aimed at testing predictors of psychological change at wave 3. After collective initial estimations, models containing only significant predictors (or tending to significance) were estimated in order to provide better control for overall type I error rates (Kleinbaum et al., 2013; Kupper et al., 1976).

Significance tests were two-tailed. Statistical significance was declared at $p < 0.05$ and a trend towards significance was declared at $0.05 < p \leq 0.10$. All statistical calculations were performed using the Statistical Package for the Social Sciences (SPSS, Windows version 27.0; SPSS Inc, Chicago, IL).

3 | RESULTS

No statistically significant differences were observed in the psychological status of the sample during the three different time points (see Figure 2): mental well-being ($F[2, 238] = 0.12, p = 0.88$), somatisation ($F[1.68, 200.27] = 0.31, p = 0.69$), anxiety ($F[1.83, 217.40] = 0.32, p = 0.27$), depression ($F[1.76, 209.93] = 1.45, p = 0.24$) and PTSD symptoms ($F[2, 238] = 0.31, p = 0.74$).

Results of MANOVA aimed at detecting differences in psychological status at wave 1, as a function of sociodemographic variables and confinement conditions, showed univariate main effects of: age on mental well-being, somatisation and anxiety; of gender on PTSD symptoms; of marital status on somatisation and anxiety; of previous physical pathology on mental well-being and of space of confinement on mental well-being. Results of ANOVA tests where the previously identified sociodemographic variables and confinement conditions were simultaneously entered for those specific indicators on which previously denoted a significant main effect, showed that age ($F[1.108] = 13.11; p = 0.01$), previous physical pathology ($F[1.108] = 7.27; p = 0.01$), and space of confinement ($F[2.108] = 5.15; p = 0.01$) were susceptible of being controlled for mental-wellbeing, age ($F[1.114] = 4.17; p = 0.04$) was susceptible of being controlled for anxiety, and gender ($F[1.117] = 7.06; p = 0.01$) was susceptible of being controlled for PTSD symptoms, in the regression analyses for wave 1.

Results of the MANOVA aimed at detecting differences in psychological status at wave 2, as a function of sociodemographic

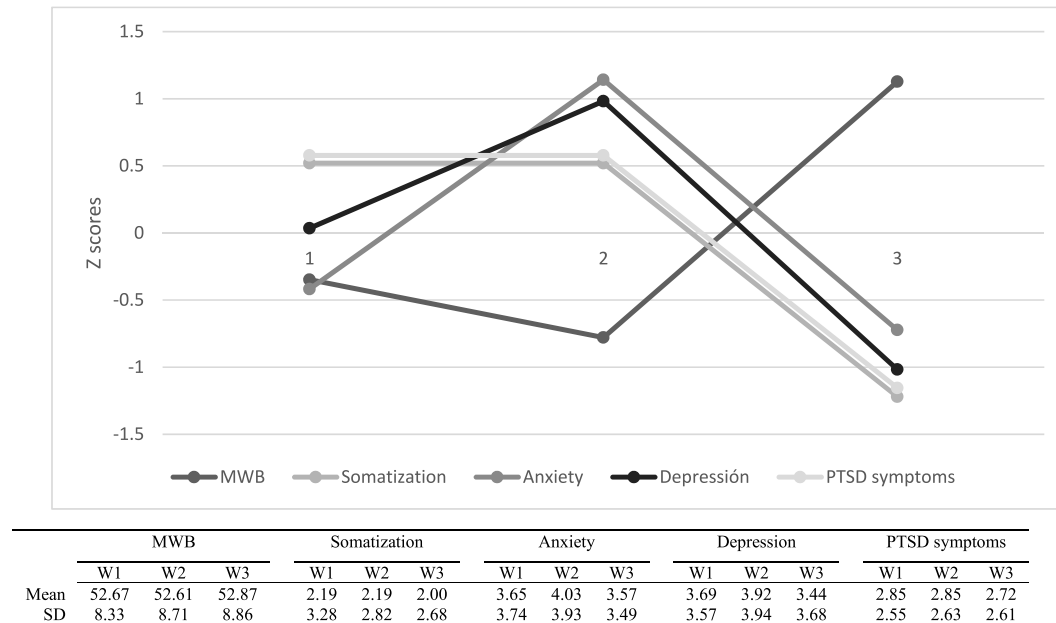


FIGURE 2 Evolution of psychological symptoms over time (z scores), means and standard deviations (raw scores)

variables and confinement conditions, showed univariate main effects of: age on mental well-being, somatisation, depression and anxiety; of gender on PTSD symptoms; of marital status on somatisation and of previous physical pathology on mental well-being. Results of the ANOVA tests showed that age ($F[1.110] = 7.47$; $p = 0.01$) and previous physical pathology ($F[1.110] = 7.38$; $p = 0.01$) were susceptible of being controlled in the prediction of mental well-being in the multilevel analyses for wave 2, age was susceptible of being controlled for depression ($F[1.117] = 5.14$; $p = 0.02$) and for anxiety ($F[1.117] = 8.63$; $p = 0.01$), and gender ($F[1.117] = 6.99$; $p = 0.01$) was susceptible of being controlled for PTSD symptoms.

Finally, results of the MANOVA aimed at detecting differences in psychological status at wave 3, as a function of sociodemographic variables and confinement conditions, showed univariate main effects of age on mental well-being, depression and anxiety, and of gender on somatisation, anxiety and PTSD symptoms. Results of the ANOVA tests showed that age was susceptible of being controlled for mental well-being ($F[1.117] = 8.34$; $p = 0.01$) and for depression ($F[1.117] = 4.79$; $p = 0.03$), and gender was susceptible of being controlled for somatisation ($F[1.117] = 3.97$; $p = 0.04$), for anxiety ($F[1.117] = 4.15$; $p = 0.04$), and for PTSD symptoms ($F[1.117] = 4.25$; $p = 0.04$), in the multilevel analyses for wave 3.

Results of multiple regressions and multilevel analyses are presented in Tables 1–3, and they are described below in favour of greater clarity. The unconditioned models (null models) of the multilevel analyses showed that a highly significant proportion of variance was determined by the wave (mental well-being 20%, somatisation 38%, anxiety 28%, depression 22% and PTSD symptoms 28%; Wald $Z = 7.75$, $p < 0.001$), with the proportion of variance due to the individual level also being significant (mental well-being 80%; Wald $Z = 8.83$, $p < 0.001$; somatisation 62%, Wald $Z = 5.71$, $p < 0.001$; anxiety 72%, Wald $Z = 6.35$, $p < 0.001$; depression 78%,

Wald $Z = 6.72$, $p < 0.001$; and PTSD symptoms 72%, Wald $Z = 6.37$, $p < 0.001$). These data indicate that psychological status varied between individuals and over time, supporting the use of multilevel analyses to examine variations over time due to individual characteristics.

Internal stressors were mostly negatively linked to psychological symptoms at wave 1, but didn't predict changes at waves 2 or 3 (Table 1). This was the case of 'Uncertainty regarding how long the confinement situation will last', 'Thinking about the possibility that yourself or someone close to you may become infected by COVID-19 or even die', 'Feeling pressured by the need to live up to the circumstances regarding work or academic responsibilities', 'Difficulty concentrating due to the state of alarm or confinement' and 'Feeling lack of productivity'. On the other hand, some stressors such as 'Uncertainty regarding when you will be able to physically meet with family, friends, students and peers again', 'Thinking about not being able to receive health care in the potential case of developing symptoms compatible with COVID-19' and 'Feeling mutual tiredness or being fed up with the people you live with', while linked to psychological symptoms at wave 1, were also predictors of a worse evolution at wave 2. In addition, 'Thinking about the impact that the virus will have on your own employment and economic situation or on that of close people' was linked to worse psychological symptoms at Wave 1 and to a worse evolution at wave 3. Finally, 'Feeling helpless as a result of not being able to participate directly in the fight against the epidemic' was a significant predictor of a worse evolution only at wave 2.

In contrast to internal stressors, external stressors in our sample were in most cases significant predictors of evolution at waves 2 or 3 (Table 2). However, many of them, being circumstantial stressors inherent to wave 1 lockdown circumstances (and, as consequence, disappeared at wave 2), were significant predictors of better

TABLE 1 Significant and trending towards significance estimates of internal stressors for psychological status at wave 1 and over time (waves 2 and 3)

	Mean	SD	Mental health				PTSD
			MWB	Somatisation	Anxiety	Depression s	
Uncertainty regarding how long the confinement will last	1.92	0.90					
W1			-0.21**		0.29***		
W2							
W3							
Uncertainty regarding when you will be able to physically meet with family, friends, students and peers	1.98	0.87					
W1				0.21*			
W2			-0.13*		0.24***	0.20**	
W3							
Thinking about the possibility that yourself or someone close to you could become infected with COVID-19 or even die	1.66	0.89					
W1				0.17 ^a			0.30***
W2							
W3							
Feeling pressured by the need to live up to the circumstances regarding work or academic responsibilities	1.52	1.04					
W1					0.24**	0.47***	
W2							
W3							
Difficulty in concentrating mentally due to the state of alarm or confinement	1.14	0.94					
W1					0.19*		0.30***
W2							
W3							
Thinking about the possibility of suffering an accident or contracting a disease (other than COVID-19) and delaying or not being able to receive health care	0.90	0.77					
W1				0.30**			
W2						-0.14*	
W3							
Thinking about not being able to receive health care in the potential case of developing symptoms compatible with COVID-19	0.94	0.86					
W1					-0.21 ^a		
W2				-0.11*			0.12*
W3							
Feeling helpless because of not being able to participate directly in the fight against the epidemic	0.73	0.84					
W1							
W2					0.19**		0.18**
W3							

(Continues)

TABLE 1 (Continued)

	Mean	SD	Mental health				PTSD s
			MWB	Somatisation	Anxiety	Depression	
Thinking about the impact that the virus will have on one's own employment and economic situation or on that of people close to you	1.85	0.97					
W1							0.17*
W2							
W3			-0.18**				
Feeling lack of productivity	1.02	0.99					
W1			-0.39***				
W2							
W3							
Feeling mutual weariness or fed up with the people you live with	0.33	0.65					
W1				0.25**	0.17*		
W2						0.14*	
W3							

Note: At Wave 2 (W2), negative coefficients should be interpreted as a faster deterioration of well-being; contrarily, positive coefficients for somatisation, anxiety, depression, and PTSD symptoms should be interpreted as a faster deterioration of this kind of symptomatology. At Wave 3 (W3), negative coefficients for MWB should be interpreted as a slower improvement of well-being; contrarily, positive coefficients for somatisation, anxiety, depression, and PTSD symptoms should be interpreted as slower improvements of this kind of symptomatology. Standardized beta regression weights for regression analysis (wave 1) and multilevel analysis (waves 2 and 3) ($n = 120$).

Abbreviations: MWB, mental well-being; PTSD s, post-traumatic stress disorders symptoms.

^a $p < 0.10$.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

psychological health at these later stages. This was the case of 'Having close people with severe symptoms or hospitalised', 'Living with a person isolated in a room because of COVID-19' and 'Sharing confinement with someone with whom you have a difficult or an unmanageable relationship'. This was also the case for 'Going out to buy food or to walk the dog under the threat of contagion' for anxiety and depression, but not for PTSD symptoms, showing a long negative impact on posttraumatic symptoms.

On the other hand, other stressors, such as 'Death of close people or relatives of close people' and 'Living with someone who has suffered the negative economic impact of confinement' were significant predictors of a worse evolution of psychological health at wave 2, including posttraumatic symptoms. Finally, 'Not having enough time to deal with the daily tasks of everyday life' and 'Receiving worrying, false or contradictory information through the media', were predictors of a worse evolution of mental well-being at wave 3. It is worth highlighting that 'Physiological disturbances associated with confinement (sleep, lethargy, pain, tiredness)' was the stressor most often associated to symptoms at wave 1 and prolonged its negative effect to wave 2. It was however linked to a better evolution at wave 3, when life was almost back to normal.

Finally, regarding uplifts (Table 3), most of them were inversely (and exclusively) linked to symptoms at wave 1, as was the case of 'Talking on the phone or making video calls with friends and family members', 'Talking, spending time, and sharing activities (leisure,

meals, homework or studies, etc.) with the people with whom I am sharing lockdown', or 'Having more time to myself'. However, other uplifts were linked to increased symptoms. In this sense, 'not having schedules, having free time, not being stressed, resting' was linked to worse mental well-being, 'Practicing sports or doing physical exercise' was positively linked to somatisation, and 'Participating in social initiatives, such as clapping with neighbours, putting up posters of encouragement, etc.' was linked to more depressive symptoms and worse mental well-being. 'Enjoying being home' was negatively linked to somatisation and to posttraumatic symptoms at wave 1, but predicted a worse evolution of mental wellbeing at wave 2, as at this stage the total lockdown had ended but activities such as working from home continued. Also, at wave 2, 'Teaching, having meetings or doing any work online' was linked to a worse evolution of depression. Finally, experiencing 'Enjoying nature and/or sunbathing on a terrace, garden or window' as more satisfactory during wave 1 was a predictor of a slower reduction of symptoms of somatisation at wave 3.

4 | DISCUSSION

The purpose of this study was to discover the impact of quarantine on the psychological functioning of a sample of academic and administrative staff at a big University in Spain, when total lockdown

TABLE 2 Significant and trending towards significance estimates of external stressors for psychological status at wave 1 and over time (waves 2 and 3)

	Mean	SD	Mental health				
			MWB	Somatisation	Anxiety	Depression	PTSD s
Not having enough time to deal with the daily tasks of everyday life	1.21	1.11					
W1							
W2							
W3			-0.24***				
Living in confinement with young children or dependants and attending to their needs	0.62	1.04					
W1							
W2			0.12 ^a				
W3							
Having close people with severe symptoms or hospitalised	0.61	0.955					
W1							
W2				-0.23**			-0.15*
W3							
Death of close people or relatives of close people	0.68	1.01					
W1							
W2				0.16 ^a			0.24**
W3							
Receiving worrying, false, or contradictory information through the media	1.49	1.02					
W1							0.19*
W2							
W3			-0.14*				
Going out to buy food or to walk the dog under the threat of contagion	1.06	0.88					
W1							
W2					-0.12 ^a	-0.13*	0.13*
W3							
Living with a person isolated in a room because of COVID-19	1.97	0.96					
W1					0.13 ^a		
W2				0.16**			
W3							-0.14*
Updating knowledge related to procedures and resources for working from home or for online academic activities	0.08	0.41					
W1							
W2							
W3					0.19*		
Sharing confinement with someone with whom you have a difficult or an unmanageable relationship	1.23	1.04					
W1							
W2				0.15*			-0.15*
W3							

(Continues)

TABLE 2 (Continued)

	Mean	SD	Mental health				
			MWB	Somatisation	Anxiety	Depression	PTSD s
Living with someone who has suffered the negative economic impact of confinement	0.08	0.37					
W1			0.17*				
W2			−0.26***	0.24***	0.19**	0.22***	0.17**
W3							
Having to go to work while being of high risk or living at home with people who are at a high risk	0.36	0.85					
W1				0.16*			
W2						0.12 ^a	−0.12 ^a
W3							
Physiological disturbances associated with confinement (sleep, lethargy, pain, tiredness)	1.19	0.96					
W1			−0.32***	0.58***	0.55***	0.50***	0.45***
W2			−0.18**	0.17*	0.27***		
W3			0.11 ^a	−0.21*			
Monotony, boredom or lack of stimulating or varied activities	0.86	0.82					
W1			−0.24**			0.22**	
W2							
W3							

Note: At Wave 2 (W2), negative coefficients should be interpreted as a faster deterioration of well-being; contrarily, positive coefficients for somatisation, anxiety, depression, and PTSD symptoms should be interpreted as a faster deterioration of this kind of symptomatology. At Wave 3 (W3), negative coefficients for MWB should be interpreted as a slower improvement of well-being; contrarily, positive coefficients for somatisation, anxiety, depression, and PTSD symptoms should be interpreted as slower improvements of this kind of symptomatology. Standardized beta regression weights for regression analysis (wave 1) and multilevel analysis (waves 2 and 3) ($n = 120$).

Abbreviations: MWB, mental well-being; PTSD s, post-traumatic stress disorders symptoms.

^a $p < 0.10$.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

was declared for the entire country due to COVID-19. Previous studies have reported that confinement lasting for more than 10 days has important negative psychological effects compared to shorter lockdowns (Hawryluck et al., 2004). That is why the duration of the quarantine is such an important element, since authors have found associations between duration and psychological disorders, showing greater post-traumatic stress symptoms, avoidance behaviours, and anger during longer periods (Reynolds et al., 2008). Thus, this study focussed on different aims related to assessing the changes in mental health over a longer period, specifically over 3 months. Furthermore, we have highlighted the need to differentiate between internal and external stressors and uplifts of quarantine in terms of their connection to well-being over time, both being linked to better or worse mental health outcomes as a function of the time measurement which was taken. Knowledge of this circumstance may help to significantly improve strategies of prevention.

According to the first aim of the study, results indicate that, overall, psychological status related to mental well-being, somatisation, anxiety, depression and PTSD symptoms did not change over

time. Taking that into consideration, due to the nature of the study, there were no pre-confinement measurements of the variables, this could evidence that, once the first changes after confinement were established, evolution of symptoms was stable throughout de-escalation, showing that a long quarantine and a state of mental alertness could have long lasting effects, even once normality has been re-established. Furthermore, a significant interindividual variability was also found, meaning that personal circumstances need to be taken into account to explain the evolution of psychological status over time. This circumstance supports the importance of our second aim.

In relation to internal stressors, our results are in accordance with studies that have demonstrated they play a predictive role, specifically during the first moments of confinement (Hyland et al., 2020; Kang et al., 2020; Odriozola-Gonzalez et al., 2020). For example, it was found that uncertainty regarding the duration of lockdown or feeling pressure from the need to live up to the circumstances regarding work or academic responsibilities predicted anxiety and depression respectively (Van Damme et al., 2020; Zhang & Ma, 2020). Moreover, our results suggest that thinking

about the possibility that someone close may become infected or even die, and difficulty concentrating mentally due to the state of alarm or confinement predicted anxiety and post-traumatic stress symptoms. Finally, it has also been found that feelings of lack of

productivity predicted lower levels of well-being (Li et al., 2020). In addition, it should be noted that some internal stressors also seemed to have a predictive role over time. Specifically, it was found that uncertainty, anticipation of negative events, or feeling mutual

TABLE 3 Significant and trending towards significance estimates of uplifts for psychological status at wave 1 and over time (waves 2 and 3)

	Mean	SD	Mental health				PTSD
			MWB	Somat	Anxiety	Depression	
Talking on the phone or making video calls with friends and family members	2.31	0.78					
W1			0.17*				-0.20*
W2							
W3							
Participating in social initiatives, such as clapping with neighbours or putting up posters of encouragement	1.28	1.00					
W1			-0.21*				0.30**
W2							0.10 ^a
W3							
Chatting, spending time, sharing activities (leisure, meals, homework or studies) with the people with whom I share confinement (children or partner)	1.77	1.03					
W1			0.31***				-0.29**
W2							
W3							
Enjoying being home	1.79	0.93					
W1				-0.22*			-0.20*
W2			-0.14*				
W3							
Having more time to oneself	1.09	0.90					
W1			0.36***		-0.27**		-0.22*
W2							
W3							
Teaching, having meetings or doing any work online	1.63	1.03					
W1							
W2							0.16**
W3							
Not having schedules, having free time, not having stress, resting	0.94	0.96					
W1							-0.18*
W2							
W3							
Enjoying nature and sunbathing from the terrace, garden or window	0.90	0.97					
W1							
W2							
W3							0.18*

(Continues)

TABLE 3 (Continued)

			Mental health				PTSD
	Mean	SD	MWB	Somat	Anxiety	Depression s	
Practicing sports or doing physical exercise	1.08	0.92					
W1					0.18*		0.17 ^a
W2							
W3							

Note: At Wave 2 (W2), negative coefficients should be interpreted as a faster deterioration of well-being; contrarily, positive coefficients for somatisation, anxiety, depression, and PTSD symptoms should be interpreted as a faster deterioration of this kind of symptomatology. At Wave 3 (W3), negative coefficients for MWB should be interpreted as a slower improvement of well-being; contrarily, positive coefficients for somatisation, anxiety, depression, and PTSD symptoms should be interpreted as slower improvements of this kind of symptomatology. Standardized beta regression weights for regression analysis (wave 1) and multilevel analysis (waves 2 and 3) ($n = 120$).

Abbreviations: MWB, mental well-being; PTSD s, post-traumatic stress disorders symptoms.

^a $p < 0.10$.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

tiredness or being fed up with the people you live with, predicted high levels of anxiety, depression, and low levels of well-being. Furthermore, we also found that thinking about the impact that the virus could have on your own employment and economic situation or on that of close people, was linked to high post-traumatic stress symptoms at wave 1, but also to low levels of well-being at wave 3. These results are consistent with studies that have shown that uncertainty, fear, economic turmoil, lack of social connectedness, work, and income take a huge toll in terms of anxiety and worry, leading to 'psychological distress' (Zhang, et al., 2020).

Regarding external stressors, in most cases, they were found to be significant predictors of evolution at waves 2 or 3. However, many of them, being circumstantial stressors inherent to wave 1 lockdown circumstances (and thus disappearing at wave 2), were significant predictors of better psychological health at the later stages. This was the case of having close people with severe symptoms (or hospitalised) and living with a person isolated in a room due to COVID-19. Moreover, an unusual finding in our results was that while it has been shown that social support contributes to mental health (Pantell, 2020), our results suggest that under lockdown conditions, sharing confinement with someone with whom you have a difficult or complicated relationship to manage was a significant stressor, and was associated to better wellbeing and low depression symptoms when phase 1 of de-escalation began (wave 2). Similarly, going out to buy food or to walk the dog under the threat of contagion, was also a circumstantial stressor inherent to wave 1 of lockdown, being however a significant predictor of better psychological health at advanced stages (wave 2) but, importantly, not for PTSD, showing a long negative impact on posttraumatic symptoms. This result is partially in accordance with previous studies where it has been found that resilience behaviours may be inversely associated with PTSD (Alshehri et al., 2020), and may be related to the fact that people who walked the dog during wave 1, experienced an improvement of their condition in wave 2 that made them enjoy an experience that others weren't able to have. At wave 2, when the de-escalation began, these

people had an additional source of well-being than the rest of the sample, since they had a pet and took it for walks in low-risk conditions, interacting with it, etc. While this circumstance could have resulted in an improvement of the levels of anxiety and depression, the post-traumatic sequelae due to the situation experienced in wave 1, could also remain in some of them.

Other external stressors, for example, death of close people or relatives of close people, and living with someone who has suffered the negative economic impact of confinement, were significant predictors of posttraumatic symptoms at wave 2. This is in line with studies that have shown that people bereaved due to the death of dear friends, colleagues, and loved ones due to COVID-19, can result in anger, resentment, psychological trauma and long-term psychiatric sequelae (Ho et al., 2020).

In addition, some external stressors were predictors of a worse evolution of mental well-being at wave 3. For example, it could be suggested that not having enough time to deal with daily tasks could be a stressor even by the end of total lockdown, as working from home remained for several months. Also, receiving worrying or contradictory information through the media were also predictors of a worse evolution of mental well-being at wave 3. In this way, as previously reported, lack of information is a further aggravator of symptoms, with studies showing how participants cited poor information from health authorities as a powerful stressor, making the uncertainty of the context greater, thereby increasing fear (Caleo et al., 2018; Di Giovanni et al., 2004). This is also in line with studies that have pointed out that a constant flow of readily available information, vast amounts of information easily accessible on social media, and reinforced messaging obtained via online social networking services (e.g. announcements related to deaths, and infections locally, nationally and/or internationally), is related with the presence of psychological distress and fear (Dubey et al., 2020a), with teachers emerging as especially vulnerable (Chen et al., 2022; Kukreti et al., 2021; Yi et al., 2021). Also, this is in accordance with other studies that have shown that rapidly expanding mass hysteria and

panic regarding COVID-19 strongly influenced enduring psychological problems which have potentially been even more detrimental in the long run than the virus itself (Depoux et al., 2020). Because of this, it seems necessary to create healthy habits to protect minds from the negative effects of COVID-19, and authors have highlighted the need to control exposure to the news, and to limit choices to the most reliable sources (Pancani et al., 2021).

To conclude with external stressors, it is worth highlighting that sleep, lethargy, pain, and tiredness associated with confinement were the stressors more often associated to symptoms at wave 1 and prolonged their negative effects during wave 2. This is in accordance with studies that have pointed out that adverse psychosomatic outcomes common among people are expected to increase significantly due to the pandemic itself in general population (Dubey et al., 2020; Losada-Baltar et al., 2022), but they were also found in a university sample of 976 people after receiving the stay-at-home order (Ozamiz-Etxebarria, et al., 2020). In contrast, in our sample those physiological alterations were linked to a better evolution at wave 3, when life had returned to normal. It's possible that because during wave 3 people were able to return to part of their routines this contributed to the reduction of these symptoms.

In relation to uplifts, our results have shown that most of them were inversely (and exclusively) linked to symptoms at Wave 1. This was the case, for example, of talking on the phone or making video calls with friends and family members, or spending time, and sharing activities with the people with whom the person is sharing lockdown. Most of those uplifts involve social interactions with family, friends and others, and leisure and recreation activities, as it was also reported recently by Eklund et al. (2022). However, other uplifts were linked to increased symptoms when participants experienced them as more satisfactory. This was the case of participation in social initiatives, such as clapping with neighbours or putting up posters of encouragement, which were associated to more depressive symptoms and worse mental well-being at wave 1.

In comparison to the other healthy uplifts (talking on the phone, sharing activities with people), taking part of initiatives such as clapping with neighbours or putting up posters of encouragement, involve an active attentional focussing on the critical circumstances of the pandemic that may result in the emergence of paradoxical negative consequences (Lyadurai et al., 2018). It would be interesting to know if, despite these potentially negative consequences, maintaining focus might help to preserve active precautionary measures against the pandemic.

Regarding practicing sports and doing physical exercise, they were positively linked to somatisation, possibly showing a phenomenon of reverse causation where only people characterised by physical symptoms could be trying to cope with them by means of exercise. This could be partially in agreement with previous studies conducted in two samples of university staff where women previously affected by pain significantly increased their frequency of physical activity during the period of confinement in order to cope with their symptoms (Rodríguez-Nogueira et al., 2020). Finally, and especially important, certain types of uplifts, such as 'enjoying being

home or enjoying nature and/or sunbathing on a terrace, garden or window', while negatively linked to symptoms at wave 1, predicted a worse evolution of mental well-being at wave 2 and 3 when the circumstances allowed for lifting of lockdown restrictions partially and reassuming duties in non-favourable conditions. While the effect observed in wave 1 is in accordance with studies that have shown that people living in a house showed lower levels of distress, perceived better sleep quality, and showed higher positive affect than those living in flats (Pérez et al., 2021), the paradoxical effects observed in waves 2 and 3 may be especially of special relevance for the Spanish population, due to their higher people-orientation (Ehlich, et al., 1995, p. 204), as it is commented further ahead in the Strengths and Limitations section.

4.1 | Conclusions and application

A high percentage of the general population has presented psychological sequelae such as anxiety, depression and somatisation due to lockdown, and may even present symptoms associated with post-traumatic stress disorder over time (Sun et al., 2020). Derived from these results, it can be concluded that the periods of confinement imply a serious risk of psychological damage for the population. In relation to the internal and external stressors evaluated, several stressors have been identified to have a clearly negative effect on the psychological state of participants (circumstances related to work or academic responsibilities, or feeling mutual tiredness or being fed up with the people with whom you coexist) that even maintain their effects in the long term (thinking about the impact that the virus will have on their own employment and economic situation, or receiving worrying or contradictory information through the media). Some of those results are in line with previous studies that presented non-university teachers as especially vulnerable to the psychological consequences of COVID-19 lockdown (Chen et al., 2022; Kukreti et al., 2021; Yi et al., 2021), which can be attributed to factors also present among academic and administrative university personnel. Likewise, the results also show the existence of some uplifts that, whilst being enjoyable in the short term, could become less adaptive by the end of the full lockdown (for example, enjoying being home).

Taking this information into consideration, along with the quarantine measures imposed by governments there is a need for psychological assistance, planning, and monitoring, not only during lockdown but also in the subsequent de-escalation (Liu et al., 2020; Ozamiz-Etxebarria et al., 2020). Our data supports the findings of Huang and Zhao (2020) regarding the importance of implementing preventive mental health policies to reduce the impact of quarantines on the most vulnerable population groups, while facilitating access to psychological support. Politics of detection and prevention based on interindividual differences could be essential during and after lockdown periods in order to avoid dramatic consequences on the population. This could be, for example, the case of suicide risk. Whilst evidence about suicidal risk increase after COVID-19 and other

infectious diseases epidemics is weak (Appleby, 2021; Leske et al., 2021; Pirkis et al., 2021; Qin & Mehlum, 2021; Rogers et al., 2021; Rück et al., 2020; Tandon, 2021; Yoshioka et al., 2022), these outbreaks may have a delayed effect on suicide after an initial period of reduced risk (Leaune et al., 2020; Rück et al., 2020), and/or may affect specific subgroups considered as especially vulnerable (Yoshioka et al., 2022). This could be especially significant under confinement conditions, when people can be exposed to extensive periods of Internet use, considering evidence about approaching suicide through using Internet to obtain information on suicide methods (Alao et al., 2006; Cantrell & Minns, 2011; Corkery et al., 2010; Solano et al., 2016). Additionally, it is essential to promote psychoeducational measures that encourage adherence to routines besides providing social support through natural support networks and placing an emphasis on developing mechanisms of resilience. This conclusion is in line with other research that has pointed out that these results must be taken into account by health institutions and those responsible for the Prevention of Occupational Risks at Spanish universities (Rodríguez-Nogueira et al., 2021). Using sources of social support to keep the focus away from the pandemic's consequences, could also help to maintain a better well-being during quarantine. Finally, it is important to keep in mind that locking down is not only linked to potential losses, but also to potential gains (i.e. enjoying being home). This study shows how the cessation of these gains may lead to a worsening of mental wellbeing once quarantine has concluded. A premature identification of such gains, followed by a correct preparation for cessation and support during the process of returning to normality may be essential.

4.2 | Strengths and Limitations

In summary, this study set out to explore the emotional impact of lockdown during the COVID-19 crisis on Spain, aiming to identify how different stressors and uplifts impacted academic population over time, specifically academic and administrative staff at Rey Juan Carlos University. This longitudinal approach over 3 months, with two follow-ups, in contrast to the majority of the cross-sectional studies on COVID consequences on mental health, has made it possible to differentiate circumstances which only affected population during COVID, from others which extended their influence over time. At the same time, we were able to identify the stressors and uplifts that, during confinement, seemingly helped to improve circumstances of people undergoing lockdown but that could affect negatively later on. This constitutes a significant source of information in the face of a preventive approach.

This study has several limitations to acknowledge. First, it would have been desirable to have had a baseline of the psychological status of the sample previous to the beginning of the COVID pandemic. Second, the respondents needed to have access to the Internet, which suggests that they had higher socioeconomic status than the mean of the population. Third, the voluntary nature of the survey may have introduced a response bias if the non-respondents

were either too symptomatic to respond, or too relaxed, and therefore not interested in this survey. Moreover, other reasons for not participating in the study are also possible. In addition, the voluntary nature has also led to a significant loss of sample throughout the study. Fourth, the list of external and internal stressors and uplifts of confinement was specifically developed for this study. Due to the inexistence, in March of 2020, of these types of lists in the literature, it was the only way to identify the potential sources of stress and satisfaction. Because of each indicator on this list of stressors refers to a single circumstance existing by itself in the real or mental context of anyone, and has not been considered as a part of a higher-level conceptual element or construct in this study, construct validity examination makes no sense either. Other forms of validity seem to be appropriate here. For example, a very high face validity is evident for the list of stressors, and the high correlations with mental health at wave 1 (followed by correlations at waves 2 and 3), can be interpreted as good evidence of concurrent validity. Despite that, and considering validation as a 'never-ending process' (Anastasi, 1986; Cronbach, 1971; Shepard, 1993), we encourage researchers to further study the validity of this list of stressors. In the same way, meanwhile analysis of the internal consistency of this list of stressors makes no sense here also, not considering stability could be considered a limitation of the study. Fifth, the assessed time period of the WEMWBS (past two weeks) differs from the time period of the BSI-18 (past week) and the TSQ (past week). Although the evaluation of mental well-being needs to refer to longer periods of time than the assessment of the presence of certain symptoms (anxiety, depression, post-traumatic symptoms), the different periods addressed by these measures should be kept in mind. Sixth, we adopted an online convenience sampling strategy which was not based on a random selection of the sample. Therefore, the possibility of sampling bias should be considered. Moreover, this study relied on self-reported answers regarding experiences during home-quarantine stay among people with different circumstances, and with different basic socio-demographic data. However, this basic socio-demographic data such as marital status, number of housemates or of children, or perceived emotional/social support, have been included and conveniently controlled for. Sixth, the high number of different predictors considered here makes it necessary to pay attention to the potential problem of multiple testing. Using multiple testing methods to reduce the probability of Type I error commission is normally not applied to multiple linear regression because the objective is to vary and adjust existing models and, in doing so, probably would increase the number of false negatives (Type II errors), growing the risk of not detecting some real effects. As a consequence, we have employed the most common method to reduce inflation of Type I error: to reanalyse only significant terms, once the first significant predictors were detected, to test if significance was maintained. In spite of that, we call to be cautious with the identified effects, especially with the smaller ones. Note, however, that the observed declining of effect sizes over time is expectable in as much as the time of measurement of the mental health is farther from the moment of measurement of the predictors (made at wave 1).

Finally, related to the generalisation of the results, although some differences between studies and nationalities could be explained by sampling or the use of different assessments (Kira, Shuwiekh, & Ashby, 2021; Kira, Shuwiekh, & Rice, 2021), a deeper analysis reveals that there are layers of communicative, emotional, and mental culture diversities that should be undeniably considered here. Many thought processes, behaviour patterns and unspoken rules of interaction may explain differences between cultures related to the COVID-19 effects, which may go almost unnoticed in one's home culture. For example, although Spanish people maintain a reputation for being laid-back, especially in the southern regions, their scores were very high in uncertainty avoidance, and typically prefer to have rules for all situations (Hoeken et al., 2003). Moreover, in Spain, identity is often influenced by the in groups that one belongs to, and it has been indicated that this sense of belonging is determined by both the family group as well as the friend group (Goodwin & Plaza, 2000, p. 289). In contrast, other countries such as Australia, Canada, Germany, The Netherlands, or United States, are commonly used as a prime example of cultural individualism (Schreier et al., 2010). This means that people in those countries, compared to Spain, are supposed to look after themselves and their direct family more than Spanish population. In general, these aspects of Spanish culture, may explain some of the results found (Hofstede et al., 2010, p. 519–521). For example, for an American, staying at home cooped up with his family and not going out to develop individuality and search for new challenges could be inconceivable. This aspect could be considered an internal stressor of confinement that could influence a higher level of stress, compared to Spanish population, who have been described as very people-oriented, letting relationships interrupt daily tasks and sacrificing space and privacy for proximity to others (Ehlich, et al., 1995, p. 204). In the same line, the fact that the East, in general, tends to favour the community over the individual and to value the collective over the particular may have helped countries such as China, South Korea and Japan to respond more effectively to the pandemic than Western countries, where the triumph of individual freedoms and individual liberties may be overrated. In spite of these differences, however, in general the results of the present study found support the literature on COVID-19 across countries, with, for example, 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; Luo et al., 2020; Mazza et al., 2020; Pappa et al., 2020; Qiu et al., 2020; Wang et al., 2020).

CONFLICT OF INTEREST

The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organization or entity with any financial interest, or non-financial interest in the subject matter or materials discussed in this manuscript.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are openly available in e-cienciaDatos at <https://doi.org/10.21950/QE7KOA>.

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APPENDIX 1

Full list of external stressors, internal stressors and uplifts

Full list of external stressors

- Not having enough time to deal with the daily tasks of everyday life
- Living during confinement with young children or dependants and attending to their needs
- Having close people with severe symptoms or hospitalised
- Death of close people or relatives of close people
- Receiving worrying, false or contradictory information through the media
- Going out to buy food or to walk the dog under the threat of contagion
- Living with a person isolated in a room because of COVID-19
- Updating knowledge related to procedures and resources for working from home or for online academic activities
- Sharing confinement with someone with whom you have a difficult or an unmanageable relationship
- Living with someone who has suffered the negative economic impact of confinement

- Having to go to work while being of high risk or living at home with people who are at high risk.
- Physiological disturbances associated with confinement (sleep, lethargy, pain, tiredness)
- Monotony, boredom or lack of stimulating or varied activities

Full list of internal stressors

- Uncertainty regarding how long the confinement will last
- Uncertainty regarding when you will be able to physically meet with family, friends, students and peers.
- Thinking about the possibility that yourself or someone close to you could become infected with COVID-19 or even die
- Feeling pressured by the need to live up to the circumstances regarding work or academic responsibilities
- Difficulty in concentrating mentally due to the state of alarm or confinement
- Thinking about the possibility of suffering an accident or contracting a disease (other than COVID-19) and delaying or not being able to receive health care
- Thinking about not being able to receive health care in the potential case of developing symptoms compatible with COVID-19.
- Feeling helpless because of not being able to participate directly in the fight against the epidemic
- Thinking about the impact that the virus will have on one's own employment and economic situation or on that of people close to you
- Feeling a lack of productivity
- Feeling mutual weariness or fed up with the people you live with

Full list of uplifts

- Talking on the phone or making video calls with friends and family members.
- Participating in social initiatives, such as clapping with neighbours or putting up posters of encouragement.
- Chatting, spending time, sharing activities (leisure, meals, homework or studies) with the people with whom I share confinement (children or partner).
- Enjoying being home.
- Having more time to oneself.
- Teaching, having meetings or doing any work online
- Carrying out leisure activities (listening to music, playing an instrument, watching movies, watching series, reading, listening to the radio and cooking—if you enjoy it-).
- Not having schedules, having free time, not having stress, resting.
- Evolving personally towards a new way of understanding life and relating to the environment (appreciating to a greater extent what you have, reflecting on the most satisfactory way of investing one's time and thinking about new ways of reconciling personal and work life).

Enjoying nature and sunbathing from the terrace, garden or window.

Walking the dog.

Practicing sports or doing physical exercise.

Taking the opportunity to do things around the home (hanging a picture, gardening or tidying cabinets) or not related to the home (on-line courses, writing a diary, advancing work) that I hadn't gotten around to or that I wanted to get done.