ORIGINAL

Psychological determinants and their relationship with activities carried out by health sciences students during confinement by COVID-19

Determinantes psicológicos y su relación con actividades realizadas por estudiantes de ciencias de la salud durante el confinamiento por COVID-19

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Abstract

Objectives: During lockdown by COVID-19, some individuals engaged in behaviours generating a greater sense of positivity and control. The objective was to identify relationships between affect, coping strategies, and resilience with task management, distress caused by lockdown, and difficulty observing public health restrictions.

Methods: A cross-sectional observational study (May 2020) was carried out in the Complutense University of Madrid. The sample consisted of 50 first-year Health Sciences students, wich were assessed during lockdown by COVID19. The followins scales were used: the Positive and Negative Affect Schedule (PANAS), the Coping Orientation to Problems Experienced inventory, the Connor-Davidson Resilience Scale, and the Escala de Gestión de Actividades en Situación de Confinamiento (Activity Management during Lockdown Scale).

Results: Thirty-five students (70%) displayed a score of ³6 on the scale measuring the distress caused by the public health restrictions. Associations with r values of ≥0.5 were: distress caused by the pandemic and positive affect (r=0.512); seeking new hobbies and seeking social support (r=0.567); seeking new hobbies and humour (r=0.56); reading and active problem-focused coping (r=0.5).

Conclusions: Positive affect is influenced by behaviours linked to helping neighbours. Strategies allowing subjects to occupy their time more constructively were: active problem-focused coping, seeking psychosocial support, and acceptance and personal growth. The factors related to negative affect were alcohol consumption and/or drug use, humour.

Key words: Coping; COVID-19, lockdown, health science students, psychological resilience, social isolation.

Resumen

Objetivos: Durante el confinamiento por la COVID-19, algunas personas se involucraron en comportamientos que generaron una mayor sensación de positividad y control. El objetivo del presente estudio fue identificar relaciones entre el afecto, las estrategias de afrontamiento y la resiliencia con la gestión de tareas, la angustia causada por el encierro y la dificultad para observar las restricciones de salud pública.

Métodos: Se realizó un estudio observacional transversal (mayo de 2020) en la Universidad Complutense de Madrid. La muestra estuvo conformada por 50 estudiantes de primer año de Ciencias de la Salud, los cuales fueron evaluados durante el confinamiento por la COVID19. Se utilizaron las siguientes escalas: Positive and Negative Affect Schedule (PANAS), Coping Orientation to Problems Experienced Inventory, Connor-Davidson Resilience Scale y Escala de Gestión de Actividades en Situación de Confinamiento (Activity Management during Lockdown Scale).

Resultados: 35 estudiantes (70%) presentaron una puntuación mayor de 6 en la escala que mide el malestar causado por las restricciones de salud pública. Las asociaciones con valores de r ≥0,5 fueron: angustia por la pandemia y afecto positivo (r=0,512); búsqueda de nuevos pasatiempos y búsqueda de apoyo social (r=0,567); búsqueda de nuevos pasatiempos y humor (r=0,56); lectura y afrontamiento activo centrado en el problema (r=0,5).

Conclusiones: El afecto positivo está influido por conductas vinculadas a la ayuda al prójimo. Las estrategias que permitieron a los sujetos ocupar su tiempo de manera más constructiva fueron: afrontamiento activo centrado en el problema, búsqueda de apoyo psicosocial y aceptación y crecimiento personal. Los factores relacionados con el afecto negativo fueron el consumo de alcohol y/o drogas, el humor.

Palabras clave: Afrontamiento; COVID-19, confinamineto por pandemia, estudiantes de ciencias de la salud, resiliencia psicológica, asilamiento social.

Introduction

Spain spent 99 days under lockdown as a result of the pandemic. During this period, individuals engaged in a variety of behaviours, some of which led to a greater sense of positivity and control, as reported in a study by Sandín et al.[1] Another study with a Spanish sample showed that these positive effects were particularly strong during the first few weeks of lockdown, exceeding those observed in a sample of 990 Spaniards in 2013 following five years of one of the worst economic recessions seen in recent decades[2]. In the same vein, 61% of a sample of 657 healthcare workers reported an increased sense of meaning/purpose since the COVID-19 outbreak, according to Shechter et al.[3]

However, another section of the population experienced highly negative emotions such as stress and overwhelm, hopelessness, sleep problems, and even depression. One review showed that people in China experienced boredom, loneliness, and anger during lockdown, as well as an increase in psychological problems such as anxiety, stress, and depression[4]. Brooks et al. state that the predominant feelings experienced by people in lockdown are depression, fear, guilt, and anger[5].

To explain these results, several authors have analysed the influence of factors such as coping through physical activity[4], individual resilience[6], the influence of affect on certain behaviours and fears during the pandemic[1], and the association between behaviours such as social media use and higher levels of anxiety[7].

The objective of this study was to identify significant relationships between psychological factors, coping strategies, and resilience factors and each of the following: task management, perceived distress levels, and difficulty observing public health restrictions during the COVID-19 lockdown.

Methods

Design. Population. Sample.
This is a cross-sectional observational study involving Health Sciences students during the stay-at-home lockdown.

The target population comprised 370 first-year nursing and physiotherapy students. Initially, the aim was to explore stress coping strategies at various times during the 2019-2020 academic year. The sudden onset of the pandemic and the ensuing lockdown presented a new scenario, offering an opportunity for exploration that was not to be wasted. After informing students of the study's objectives, 116 agreed to participate.

The Epidat 4.2 tool was used to calculate the required sample size. For an expected mean resilience of 70 points and a standard deviation of 10 points, a 2% accuracy and 95% confidence, the required sample size was 53 subjects. Stratified random sampling by age and sex was carried out, resulting in a final sample of 50 participants.

Measurement scales and variables
Data were collected on sociodemographic variables and other variables such as people with whom the student spent the lockdown and difficulties experienced by the student in observing the restrictions (scale from 0 to 10).

The following validated, self-report questionnaires were used to assess various psychological factors and coping strategies:
1. The Positive and Negative Affect Schedule (PANAS) assesses, separately, the positive and negative emotional experiences lived recently[8]. This is a 20-item questionnaire where participants respond using Likert scales. The items are organised into two groups: 10 items refer to *positive aspects*, and 10 refer to *negative aspects*. The Spanish version has a good reliability index (Cronbach's α >.87) and construct validity[9].
2. The COPE (Coping Orientation to Problems Experienced) inventory. The Spanish version of the COPE-48 scale assesses the following 9 coping strategies using a Likert scale ranging from 1 = "I never do that" to 4 = "I do that frequently"[10]. The mean internal consistency of the Spanish version is 0.8.
3. The Connor-Davidson Resilience Scale. The Spanish adaptation consists of 25 items which participants evaluate using Likert scales ranging from 0 (not at all) to 4 (almost always). The items are grouped into 5 dimensions: *Persistence-Tenacity-Self-Efficacy; Control Under Pressure; Adaptability and Support Networks; Control and Meaning; Spirituality*. The sum of these values constitutes the total value for Resilience, whose thresholds are: less than 70 (low); 70 to 87 (intermediate); greater than 88 (high). The internal consistency of the Spanish version was optimal[11], with a Cronbach's α coefficient = 0.86.
4. The Emotion Thermometer is part of the American National Comprehensive Cancer Network Guidelines for Distress Management[12] and measures the overall emotional distress experienced by patients on a scale from 0 to 10. It has a sensitivity between 75% and 80%, and a specificity close to 60%[13]. Patients are considered to be in emotional distress if they score 6 or more.
5. The Escala de Gestión de Actividades en Situación de Confinamiento (Activity Management during Lockdown Scale) is a list of behaviours performed during lockdown, some of which were provided by the Official Psychologists' Association of Madrid[14]. Responses were collected on a Likert scale ranging from 1 (never) to 5 (almost always).

Ethical and legal aspects
The principles enshrined in the Helsinki Declaration on Biomedical Research Involving Human Subjects were

observed at all times. All the students were informed of the objectives and terms of implementation of the research and signed an informed consent form which explained that participation was completely voluntary and anonymous, that they could freely withdraw from the study at any time without giving a reason, and that such participation did not entail any benefit or harm for students. The confidentiality and privacy of their information were preserved in compliance with current regulations on the protection of personal data. The data were entered in secure databases and access to the data was restricted to the researchers. Data analysis was limited to the purposes of this study. This research was approved by the Institutional Review Board of Complutense University of Madrid.

Data analysis

Means and standard deviations were calculated for quantitative variables. Absolute and relative frequencies (percentages) were calculated for qualitative variables. The assumption of normality of the data was checked using graphical representation tests (histograms and Q-Q and P-P plots) and statistical significance tests such as the Shapiro-Wilk test.

For statistical comparisons, the χ-squared test was used (applying Fisher's exact test, if indicated) and the Z-test for qualitative variables. For the comparison of two means, Student's t-test or Mann-Whitney's U-test was used, depending on whether or not the data in question were parametric. The homoscedasticity of the data was checked using Levene's test. To analyse the degree of association between quantitative variables, Pearson's or Spearman's correlation coefficient was used depending on the parametric nature of the data.

All hypothesis tests were two-tailed and were conducted with a statistical significance threshold of alpha error <5% ($p < .05$). Confidence intervals were calculated with 95% certainty. SPSS v. 22 and Epidat v. 4.2. were used for data analysis.

Results

Description of the characteristics of the sample

Of the 50 students, 49 were women (98%). According to the distribution by Degree, 46 corresponded to Nursing (92%) and 4 to Physiotherapy (8%). The mean age was 19.9 (5.1) years, 95% CI (18.5-21.4). 32% of the participants declared that they were working while they were studying, 92% indicated that they passed the confinement with their family, 54% that it did not cost them anything to follow the restrictions imposed during the confinement. In terms of discomfort caused by the confinement situation, 35 students (70%) indicated a value equal to or greater than 6, with a mean score of 6 (2.2) 95% CI 5.4 -6.7. **Table I** shows the final characteristics of the sample.

Table I: Characteristics of the sample.

Variable	Mean or *n* (SD or %)	
Female	49 (98)	
Age (years)	19.9 (5.1)	
Employed	16 (32)	
Nursing students	46 (92)	
With whom are you spending the lockdown?		
With my family	46 (92%)	
Other	4 (8%)	
I find it difficult to observe the restrictions		
Never	27 (54%)	
Rarely	14 (28%)	
Sometimes	6 (12%)	
Often	3 (6%)	
Almost always	0	
Distress caused by the restrictions imposed (from 0 to 10)		6 (2.2)
	0-5	15 (30%)
	6-10	35 (70%)

Table II: Results of the PANAS, COPE-48, and Resilience scales during the COVID-19 lockdown.

	Mean, SD	95% CI
	PANAS	
POS. AFFECT	24.9, 7.7	22.7 - 27.1
NEG. AFFECT	26.3, 7.7	24.1 - 28.5
	COPE-48	
APC	25.3, 3.8	24.2 - 26.4
ACD	4.6, 1.6	4.1 - 5.1
FVE	10.5, 2.6	9.8 - 11.2
SSS	22.3, 5.7	20.7 - 23.9
HUM	9.3, 3.3	8.4 - 10.2
REL	7.2, 4.6	5.9 - 8.5
DEN	5.3, 2.1	4.7 - 5.9
REC	9.6 (2.3)	9 - 10.3
APG	21.2 (3.6)	20.2 - 22.2
	RESILIENCE	
PTS	23, 4.9	21.6 - 24.4
CUP	17, 4.4	15.8 - 18.3
ASN	16.1, 3.5	15.1 - 17.1
CAP	8.7, 2.3	8.05 - 9.4
SPI	4.3, 2.5	3.6 - 5
RSC	69.2, 13.7	65.3 - 73.1

APC: Active problem-focused coping; ACD: Alcohol consumption and/or drug use; FVE: Focus on and Venting of Emotions; SSS: Seeking Social Support; HUM: Humour; REL: Religion; DEN: Denial; REC: Restraint Coping; APG: Acceptance and personal growth; PTS: Persistence, Tenacity, and Self-Efficacy; CUP: Control Under Pressure; ASN: Adaptability and Support Networks; CAP: Control And Purpose; SPI: Spirituality; RSC: Resilience.

Through the PANAS, COPE-48 and Connor-Davidson scales, the psychological situation of the participants was analyzed about their affective state (positive or negative), coping strategies in the face of stress caused by confinement and resilience in the face of exceptionality confinement due to the pandemic, respectively (**Table II**). As can be seen, the mean score for the entire sample was 69.2 (13.7) 95% CI 65.3 - 73.1 as estimated for calculating the sample size.

Table III: Activities carried out during lockdown.

ACTIVITY DURING LOCKDOWN	Mean (SD)	95% CI
Watching the news	3.6 (1.2)	3.3 - 4
Watching TV	3.4 (1.1)	3.1 - 3.7
Listening to music	4.4 (0.95)	4.1 - 4.7
Carrying out university study	4.3 (0.8)	4 - 4.5
Reading	3.3 (1.2)	2.9 - 3.6
Seeking new hobbies	3.2 (1.2)	2.9
Doing household chores	3.9 (0.95)	3.6 - 4.1
Connecting with friends and family online	4.3 (1.05)	3.6 - 4.1
Completing pending tasks that they would not normally do	3.8 (0.96)	3.5 - 4.1
Keeping to a set timetable	3.6 (1.2)	3.3 - 3.9
Helping neighbours	2.4 (1.4)	2 - 2.8
Volunteering for social causes related to the pandemic	1.8 (1.2)	1.5 - 2.1
Working in healthcare during the pandemic	1.4 (1)	1.2 - 1.7
Working remotely in non-healthcare sectors	1.7 (1.1)	1.2 - 1.7
Performing routine hygiene and cleaning	4.2 (0.95)	3.95 - 4.5
Doing physical exercise	4 (1.1)	3.7 - 4.3
Talking to the people they live with	4.4 (0.86)	4.2 - 4.6
Creating a private space	4.2 (1.1)	3.9 - 4.5
Playing online games with friends	2.3 (1.4)	1.9 - 2.7

Table IV: Activities carried out during lockdown (comparison of means) and psychological state.

ACTIVITY DURING LOCKDOWN		PANAS		COPE-48									RESILIENCE					
		POS. AFFECT	NEG. AFFECT	APC	ACD	FVE	SSS	HUM	REL	DEN	REC	APG	PTS	CUP	ASN	CAP	SPI	RESC
Watching the news	≤ Mean	24.4	26.2	24.9	4.4	10.4	21.7	9.3	8.2	5.1	9.2	20.6	23.5	16.5	16.2	9.2	3.6	39
	> Mean	25.3	26.4	25.7	4.9	10.6	22.7	9.3	6.5	5.4	9.3	21.7	22.7	17.4	16	8.4	4.8	69.3
Watching TV	≤ Mean	23.8	26.1	25.3	4.5	10.4	22.5	8.6*	6.7	4.8*	9.6	21.8	22.2	17.3	15.8	8.4	4.3	68.1
	> Mean	26	26.6	25.4	4.8	10.7	22.1	10*	7.7	5.8*	9.6	20.7	23.8	16.8	16.4	9.1	4.2	70.3
Listening to music	≤ Mean	24.3	26	23.8*	4.7	10.5	22.7	7.4*	9.6	5.1	9	19.8*	22.6	17.6	16.1	8.7	4.4	69.4
	> Mean	25.3	26.5	26.2*	4.6	10.5	22	10.5*	7	5.3	10	22.1*	23.6	16.7	16.1	8.7	4.2	69.1
Carrying out university study	≤ Mean	26.2	24.1*	24.4	4.9	10.9	21.4	9	7.2	5.3	9.4	20.3*	21.7*	16.1	15.9	8.2	3.9	65.8*
	> Mean	23.2	29.2*	26.5	4.4	10.1	23.5	9.7	7.2	5.3	9.9	22.4*	24.7*	18.2	16.5	9.4	4.7	73.5*
Reading	≤ Mean	25.3	24.8	24.1*	4.9	10.5	21.8	9.2	6.9	5.6	9.8	20.5	23.1	16.6	15.9	8.8	4.3	68.6
	> Mean	24.2	28.8	27.4*	4.3	10.5	23.2	9.5	7.6	4.7	9.3	22.4	23	17.8	16.5	8.6	4.3	70.2
Seeking new hobbies	≤ Mean	25.8	23.4*	24.1*	4.9	10.9	20*	8.6*	7.2	5.3	9.6	20.1*	22.9	16.4	15.7	9	4.4	70.4
	> Mean	23.7	30.3*	27*	4.4	10	25.5*	10.3*	7.2	5.2	9.7	22.8*	23.2	16.4	15.7	8.3	4	67.6
Doing household chores	≤ Mean	25.8	25.4	24.6*	4.8	10.8	21.7	9.3	6.7	5.6	9.5	20.3*	22.7	16.9	16.1	8.5	4.3	68.5
	> Mean	22.8	28.4	27.1*	4.4	9.9	23.8	9.4	8.3	4.4	9.9	23.3*	23.8	17.3	16.3	9.2	4.3	70.8
Connecting with friends and family online	≤ Mean	25.6	24.5	24.1*	4.7	11.1	19.7*	8.7	7.3	4.8	9.7	20.8	22.7	17.5	16.9	9.3*	3.9	70.3
	> Mean	24.4	27.8	26.3*	4.6	10	24.3*	9.8	7.1	5.6	9.6	21.5	23.3	16.7	15.5	8.3*	4.5	68.4
Completing pending tasks	≤ Mean	24.8	24.9*	24.1*	4.8	10.8	21*	9.2	7.5	5.6	9.5	20.6*	23.7	17.9*	16.7*	9.1*	4.3	71.8*
	> Mean	25.3	30.1*	28.8*	4.2	9.8	25.9*	9.5	6.4	4.3	10	23*	21.2	14.6*	14.5*	7.5*	4.2	61.9*
Keeping to a set timetable	≤ Mean	25.4	24.9*	24.8	4.9*	10.6	21.8	9.2	7.1	5.5	9.6	20.8	23.1	17.3	16.2	8.8	4.4	69.8
	> Mean	24.6	30.8*	26.7	4*	10.3	23.1	9.6	8.4	5.1	9.6	22.4	23	16.4	15.9	8.4	4	67.7
Helping neighbours	≤ Mean	23.8*	26.3	24.7*	4.8	10.6	21.8	9.2	7.1	5.5	9.5	20.6*	23.3	17.5*	16.5	8.7	4.6	70.7
	> Mean	28.5*	26.4	27.5*	4.3	10.4	23.9	9.5	7.5	4.4	10	23.1*	22.1	15.6*	14.9	8.8	3.2	64.6
Volunteering for charity	≤ Mean	24.5	26.6	25.6	4.6	10.4	22.1	9.3	7.3	5.3	9.8	21.1	23.4	17.3	16.3	8.8	4.5	70.3
	> Mean	26.7	28.9	24.8	5	10.9	23.3	9.1	6.9	4.9	9	21.9	21.6	15.7	15.2	8.4	3.3	64.2
Working in healthcare	≤ Mean	24.4	26.9	24.4	4.6	10.6	22.4	9.3	7.2	5.2	9.6	21.1	23.3	17.3	16.5	8.8	4.2	69.9
	> Mean	29	22.3	25	5.3	10	21.8	9	7.3	6	9.7	21.8	21.3	15.5	13.3	8.5	5	63.7
Working remotely in non-healthcare sectors	≤ Mean	24.1	27.5*	25.2	4.6	10.5	22.3	9.2	6.8	4.9*0	9.4	21.1	23.6	17.4	16.7	8.9	4.1	70.7
	> Mean	27.9	22.2*	25.9	5	10.5	22.2	9.6	8.5	6.4*	10	21.8	21	15.8	14	8.1	4.9	63.8
Performing routine hygiene and cleaning	≤ Mean	23.3	26.2	24.8	5	10.3	21	9.6	6.9	5.4	9.6	21.1	22.6	17	16.3	8.6	39.6	68.5
	> Mean	26.5	26.4	25.9	4.4	10.7	23.6	9	7.5	5.1	9.6	21.4	23.5	17	16	8.8	4.6	69.9
Doing physical exercise	≤ Mean	25.2	22.8*	24.4*	4.9	10.2	20.3*	9	6.7	5.3	10	21.4	22.8	17.3	16.1	8.8	4.7	69.8
	> Mean	24.6	30.9*	26.5*	4.4	10.9	24.9*	9.7	7.8	5.3	9.1	22.3	23.4	16.7	16.1	8.6	3.7	68.5
Talking to the people they live with	≤ Mean	27.3	23.6*	24.2*	5	11	20.9	8.2	7.8	5.3	9.3	20	21.9	16.4	15.4	8.6	4.4	66.7
	> Mean	23.2	28.3*	26.1*	4.4	10.2	23.3	10.1	6.8	5.2	9.8	22.1	23.9	17.5	16.6	8.8	4.2	71
Creating a private space	≤ Mean	27.1*	23.9*	24.3	4.8	11	20.5	8.4	7.1	5.2	9.9	20.5	21.6	16.5	15.5	8.3	4.4	66.2
	> Mean	23.2*	28.2*	26.2	4.6	10.2	23.7	10	7.3	5.3	9.9	22.8	24.1	17.5	16.6	9.1	4.2	71.6
Playing online games with friends	≤ Mean	25.8	25.3	25.2	4.5	10.6	22.2	9.3	6.9	5.5	9.8	20.9	22.6	16.7	16.1	8.5	4.7	68.5
	> Mean	23.3	28.2	25.5	5	10.3	22.6	9.2	7.7	4.9	9.4	21.8	23.9	17.8	16.2	9.2	3.5	70.5
Finds it difficult to observe restrictions	≤ Mean	24.5	26.4	25.8*	4.6	10.3	22.3	9.4	6.9	5.1	9.9	21.4	23.2	17.1	16.1	8.7	4.3	69.3
	> Mean	26.4	26	23.3*	5.1	11.6	22.2	8.9	8.4	5.8	8.4	20.3	22.4	16.6	16.3	8.9	4.3	68.6
Distress caused by the pandemic	≤ Mean	21.5*	27.2	26.3	4.3*	10.1	21.8	10.2*	7.7	4.7	9.8	21.8	23.6	18.6*	17.3*	9.3	4.3	73*
	> Mean	28.1*	25.5	24.5	5*	10.9	22.8	8.5*	6.8	5.8	9.4	20.7	22.5	15.6*	15.1*	8.2	4.3	65.7*

APC: Active problem-focused coping; ACD: Alcohol consumption and/or drug use; FVE: Focus on and Venting of Emotions; SSS: Seeking Social Support; HUM: Humour; REL: Religion; DEN: Denial; REC: Restraint Coping; APG: Acceptance and personal growth; PTS: Persistence, Tenacity, and Self-Efficacy; CUP: Control Under Pressure; ASN: Adaptability and Support Networks; CAP: Control And Purpose; SPI: Spirituality; RSC: Resilience; * significant differences (*p*<0.05)

Table V: Correlation between activities performed during lockdown and psychological state.

ACTIVITY		PANAS		COPE-48									RESILIENCE					
		POS.	NEG.	APC	ACD	FVE	SSS	HUM	REL	DEN	REC	APG	PTS	CUP	ASN	CAP	SPI	RESC
Watching TV	Correlat. Coeff.							0.21		.279								
	Sig. (two-tailed)							0.14		.050								
Listening to music	Correlat. Coeff.			.315				.409				0.342						
	Sig. (two-tailed)			.026				.003				0.01						
Carrying out university study	Correlat. Coeff.		.320									0.193	.242					.188
	Sig. (two-tailed)		.024									0.18	.090					.190
Reading	Correlat. Coeff.			.50														
	Sig. (two-tailed)			.000														
Seeking new hobbies	Correlat. Coeff.		.401	.336			.567	0.56				0.334						
	Sig. (two-tailed)		.004	.017			.000	.08				0.018						
Doing household chores	Correlat. Coeff.			.288								0.303						
	Sig. (two-tailed)			.043								0.01						
Connecting with friends and family online	Correlat. Coeff.			.298			.430									.341		
	Sig. (two-tailed)			.035			.002									.015		
Completing pending tasks	Correlat. Coeff.		.320	.462			.384					0.403		-.125	-.114	-.257		-.131
	Sig. (two-tailed)		.023	.001			.006					0.004		.386	.431	.071		.363
Keeping to a set timetable	Correlat. Coeff.		.450		-.236													
	Sig. (two-tailed)		.001		.099													
Helping neighbours	Correlat. Coeff.	.246		.140								0.13		-0.30				
	Sig. (two-tailed)	.085		.332								0.35		0.03				
Volunteering for charity	Correlat. Coeff.			-.190														
	Sig. (two-tailed)																	
Working remotely in non-healthcare sectors	Correlat. Coeff.		-0.14							0.243								
	Sig. (two-tailed)		0.31							0.09								
Doing physical exercise	Correlat. Coeff.		.471	.206			.406											
	Sig. (two-tailed)		.001	.152			.003											
Talking to the people they live with	Correlat. Coeff.		.297	.360														
	Sig. (two-tailed)		.036	.010														
Creating a private space	Correlat. Coeff.		.302															
	Sig. (two-tailed)		.033															
Finds it difficult to observe restrictions	Correlat. Coeff.			-.240														
	Sig. (two-tailed)			.093														
Distress caused by the pandemic	Correlat. Coeff.	.512			.215		.357							.322	-.277			-.248
	Sig. (two-tailed)	.000			.134		.011							.023	.052			.083

APC: Active problem-focused coping; ACD: Alcohol consumption and/or drug use; FVE: Focus on and Venting of Emotions; SSS: Seeking Social Support; HUM: Humour; REL: Religion; DEN: Denial; REC: Restraint Coping; APG: Acceptance and personal growth; PTS: Persistence, Tenacity, and Self-Efficacy; CUP: Control Under Pressure; ASN: Adaptability and Support Networks; CAP: Control And Purpose; SPI: Spirituality; RSC: Resilience

Activities carried out during confinement and their relationship with the psychological state

About the activities carried out by the students during home confinement (**Table III**), the most frequently carried out activities (mean ≥ 4 out of a total of 5 points) stand out: listening to music, performing university obligations (academic), being connected to the network of friends, family, carry out a routine of hygiene and personal cleaning caused by the pandemic, talk with the people with whom the student lives and create an intimate space. On the contrary, the least carried out activities have been (average ≤ 2 out of a total of 5 points): collaborating with solidarity volunteering or in health work related to the Covid-19 pandemic and teleworking in non-health activities.

The psychological situation was then analysed according to participants' degree of involvement in the activities they carried out during the stay-at-home lockdown. To this end, they were divided into two groups: those with scores above the mean frequency of performance for each of the activities and those with scores below the mean. The results are shown in **table IV**.

Finally, Pearson's correlation coefficients for the variables that were significantly associated (**Table V**) were analysed to determine the strength of the association between the activity performed during lockdown and the psychological situation.

Only watching the news, working in healthcare, performing routine hygiene and cleaning, and playing online games with friends were not correlated with any of the psychological situations.

Discussion

Positive and negative affect

Negative affect was correlated with the activities suggested by the Official Psychologists' Association of Madrid to improve individuals' ability to cope with the pandemic[14]. This suggests that, at least in terms of affect, it may not be particularly beneficial to follow these recommendations. In research on a population similar to that of this study, Ubillos et al. concluded that there is a relationship between negative affect and seeking new activities during lockdown[15].

In terms of spending time on carrying out university study, the data from our study echo those reported by Cleland et al., who shows that carrying out university study during lockdown was a stressor for many students[16].

Positive affect was primarily related to helping neighbours. These results are very similar to those obtained from volunteers in the Chinese population by Sun et al.[17] Positive affect was also associated with distress caused by the pandemic, which may be explained by the fact that subjects who have positive affect tend to maintain it and strive to maintain it in spite of the circumstances. This is in line with Sandín et al.[1] who described positive affect as a protective factor against negative affect during the COVID-19 lockdown along with age, income level, working outside the home, and having a private garden at home. However, these variables behave more erratically and their predictive power is much lower than that of vulnerability or risk factors.

Coping

The participants who spent their time most constructively were those correlated with active problem-focused coping, seeking psychosocial support, and acceptance and personal growth.

As in Main et al. active problem-focused coping was associated with behaviours linked to greater productivity over time[18].

Meanwhile, seeking psychosocial support was significantly associated with tasks that helped to create a more favourable environment for fulfilling participants' health and social needs. These results are similar to those obtained by Seiffge-Krenke[19]. in an adolescent population, with females being more likely to use this coping strategy. When the findings for a Finnish study population were compared to German and Israeli populations using the same assessment instrument, the coping behaviours observed were strikingly similar despite cultural differences.

Although Cassaretto et al.[20] note that acceptance and personal growth (AC) is often used in chronic and terminal illnesses, other authors such as Sandín et al.1

observe that a number of subjects rated the lockdown experience positively in a test on 'positive experiences'. This may be due to the uncontrollability and chronicity of the stressor (lockdown), which means that the resources used by individuals are similar to those used in chronic and terminal illnesses.

Humour was associated with unproductive and distracting behaviours that require minimal effort such as watching TV and listening to music, as well as with seeking new hobbies, which requires high levels of effort. Humour has also been associated with lower levels of anxiety[21] and displays a moderating effect on stress[22].

No significant relationships were found between behaviours during lockdown and the following coping mechanisms: focus on and venting of emotions (FVE), religion (REL), and restraint coping (REC). These results are very similar to those obtained from samples of Spanish students, scoring especially low in religion[23] and contrasting sharply with samples of practising nurses when faced with the death of patients[24].

One of the least useful adaptive coping strategies was alcohol consumption and/or drug use, which was associated with distress caused by the pandemic (r=0.215). A number of authors reported an increase in alcohol consumption and/or drug use among Spanish university students during lockdown[25]. Several studies have also documented this type of coping among adolescents and young adults in response to natural disasters[26] and as a way of coping with traumatic situations[27]. This can be interpreted as an avoidance behaviour[28] or as a pleasurable behaviour[29]. Interestingly, its relationship with keeping to a set timetable was negative, which suggests that the latter is a protective factor against drug use as a coping mechanism.

Finally, denial (DEN) was associated with working remotely in non-healthcare sectors and watching TV. Denial has been more frequently associated with traumatic events and inversely associated with age[30].

Resilience

Regarding resilience, the factors associated with more constructive activities were, firstly, persistence, tenacity, and self-efficacy (PTS), which were significantly associated with carrying out university study (r=.242), and secondly, control under pressure (CUP). Interestingly, this factor was negatively correlated with completing pending tasks and helping neighbours, and positively correlated with distress caused by the pandemic. This indicates that scoring high on this factor does not protect against distress, but it makes individuals approach lockdown in a more constructive way by supporting the community through caring behaviours.

The resilience (RESC) factor helps participants to focus on university activities and to avoid negative emotions

caused by the pandemic. These results are similar to those obtained by other authors, who have reported significant relationships between resilience and life satisfaction during the pandemic[31] and between resilience and traumatic events such as earthquakes[32], hurricanes[33], and suicide rates[34]. Resilience is also related to optimism, life satisfaction, and perceived wellbeing[35,36].

Adaptability and support networks (ASN) appears to be a protective factor against distress caused by the pandemic, but does not make task management during lockdown more constructive.

The factors that were least helpful in managing activities during lockdown were control and purpose (CAP), which were negatively associated with connecting with friends and family online (r=-0,341) and completing pending tasks (r= -0.257).

Curiously, all factors with the exception of spirituality (SPI) were negatively correlated with completing pending tasks, suggesting that resilient individuals are more focused on the present and the future. No significant relationships were found between spirituality and behaviours performed during lockdown.

Finally, it is worth noting that the correlations identified in our study are very strong for several factors and are even stronger than those found in similar studies (Puigt et al., 2011).

Limitations
The study limitations include the small population size and the voluntary nature of participation in the study. Future studies should include larger samples from different academic years.

Conclusions

Positive affect is influenced by behaviours associated with helping neighbours, while negative affect is influenced by seeking new hobbies, doing physical exercise, keeping to a set timetable, carrying out university study, creating a private space, reading, and completing pending tasks. The strategies that led to a more constructive approach to time management were: active problem-focused coping (which also helps in observing lockdown restrictions), seeking psychosocial support, and acceptance and personal growth. The factors related to negative affect caused by the pandemic were: alcohol consumption and/or drug use, humour, and the resilience factor control under pressure. The protective factors against negative affect caused by the pandemic were resilience and the resilience factor adaptability and support networks.

Given that spending time on helping neighbours within the lockdown constraints generated higher levels of positive affect, a more caring culture towards the groups closest to students could be fostered in disaster situations, such as service-learning. The study data highlight the importance of further training on time management during lockdown in order to avoid coping strategies such as alcohol consumption and/or drug use and watching TV excessively, as this can negatively affect health and lead to increased distress. We believe that these findings can help to create programmes targeting different psychological profiles to ensure that lockdowns are not experienced as a deprivation of individuals' freedom but are instead perceived as an opportunity to become stronger and glean satisfaction from helping others.

Conflict of interest
The authors declare that there is no conflict of interest.

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