Psicología Educativa (2024) xx(x) xx-xx

Psicología Educativa

https://journals.copmadrid.org/psed

Academic and Emotional Challenges beyond COVID-19. Analysis of Years and Branches of Study in 35 Spanish Universities

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ARTICLE INFO

Article history:
Received 7 December 2023
Accepted 22 March 2024
Available online 23 May 2024

Keywords:
University students
Post-pandemic
Academic overload
Anxiety
Stress
Attentional difficulties
Psychoeducational intervention
Branches of knowledge

A B S T R A C T

Background: Evidence indicates an increasing prevalence of psychological issues among university students, exacerbated by COVID-19. However, conclusive data on the situation in Spanish universities is lacking. *Objective:* This study explores academic, interpersonal, and emotional problems, as well as the differences between years and branches of university studies. *Method:* 5,221 students from 35 Spanish universities completed an online questionnaire covering standardized tests. *Results:* The mean scores show students overwhelmed by academic work, struggling to distance themselves from personal problems and seeking help, with stress and physical discomfort, and emotional symptoms consistent with a probable clinical case of anxiety. Students report declines in attention, concentration, and emotional well-being due to the pandemic. Factorial ANOVAs showed a high transversality of the problems between years of study but identified differences between study branches. *Conclusions:* The results offer valuable information for university psychological support services to assess identified issues and develop specific interventions among students.

Los retos académicos y emocionales después del COVID-19. Análisis de 35 universidades españolas por ramas y cursos de estudio

Palabras clave:
Alumnos universitarios
Pospandemia
Ansiedad
Sobrecarga académica
Estrés
Dificultades de atención
Intervención psicoeducativa
Ramas de conocimiento

R E S U M E N

Antecedentes: Existen evidencias del aumento de problemas psicológicos en estudiantes universitarios, agravados por la COVID-19. Sin embargo, carecemos de datos concluyentes sobre la situación en la universidad española. *Objetivo:* El trabajo se propone identificar problemas académicos, interpersonales y emocionales y explorar las diferencias entre cursos y ramas de estudios. *Método:* 5,221 estudiantes de 35 universidades españolas cumplimetaron un cuestionario online que incluía medidas estandarizadas. *Resultados:* Las puntuaciones medias muestran a unos alumnos con sobrecarga académica, mucha dificultad para distanciarse de problemas personales y buscar ayuda, malestar físico y sintomatología emocional compatible con un probable caso clínico de ansiedad. A consecuencia de la pandemia se refiere deterioro de la atención y concentración y del estado emocional. Los ANOVA factoriales muestran una gran transversalidad de los problemas entre cursos, pero aparecen diferencias entre ramas de estudio. *Conclusiones:* Los resultados pueden ser útiles para que los servicios universitarios de atención psicológica evalúen los problemas detectados y pongan en marcha intervenciones específicas con sus estudiantes.

University studies entail challenges and problems, of both academic and interpersonal nature, which frequently trigger stress, anxiety, or depression. This emotional distress is directly related to a decrease in both academic performance and personal well-being (Jeffries & Salzer, 2022; Morelli et al., 2021). In a previous study involving Spanish second-year university students (Fernández-Rodríguez et al., 2019), 44.7% of the participants were found to present emotional distress indicating anxiety and 13.5% indicating depression. In an international multi-centre study with 13,984 participants, Auerbach et al. (2018) identified a prevalence for lifetime mental disorders amongst university students of 35.5%. The most common of these was the major depressive disorder, followed by the generalized anxiety disorder. Both were associated with academic and social problems in at least one in every five people. Lipson et al. (2022) observed that between 2013 and 2021, problems of depression and anxiety increased by more than 100% in university students in the USA, with this tendency affecting all social and ethnic groups.

The COVID-19 pandemic triggered a mental health crisis among students. According to the World Health Organization (WHO, 2021), over 35% of the global population experienced symptoms of anxiety and depression during the pandemic, with young people and university students among the most affected groups. Different studies

Cite this article as: Fernández-Rodríguez, C., Serrato Romero, L., Soriano Moreno, S., & Cuesta, M. (2024). Academic and emotional challenges beyond COVID-19. Analysis of years and branches of study in 35 Spanish universities. *Psicología Educativa*. Ahead of print. https://doi.org/10.5093/psed2024a8

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and meta-analyses highlight that the prevalence of depression, anxiety, suicidal ideation and psychological distress escalated compared to pre-pandemic levels (Munuera Gómez et al., 2023; Peng et al., 2023; Wu et al., 2023). Specifically, the pooled prevalence of anxiety symptoms and the pooled prevalence of depressive symptoms are estimated to be more than 30%. Generally, the highest percentages correspond to anxiety, though the comorbidity between emotional symptoms is high (Jehi et al., 2022; Lipson et al., 2022). In Spain, Millán-Jiménez et al. (2021) indicated that anxiety prevalence remained high even after the COVID-19 lockdown, with over 55% of students reporting anxiety symptoms.

Although methodological differences limit the extent to which studies can be compared and firm conclusions reached, the data do suggest a series of factors involved in emotional distress. The students reported limited interactions with their teachers and peers, leading to feelings of disconnection, as well as difficulties in establishing or maintaining relationships. The feeling of loneliness associated with the loss of routine and lack of social contact would have had a harmful effect (Kiltz et al., 2023; Wang et al., 2023) whereas the proximity of and living with family, together with the availability of socioeconomic resources is considered to be a protecting factor (Jehi et al., 2022; Karaman et al., 2021). Similarly, economic and academic problems are identified as the principal reasons for worry and uncertainty regarding the future in students. Unemployment is also considered to be a clear cause of hopelessness and anxiety amongst university students, regardless of the country and chosen profession (da Paixão et al., 2022; Servidio et al., 2022).

The prevalence of depression and anxiety symptomatology during the COVID pandemic was greater amongst female university students (Woon et al., 2021; Wu et al., 2023). This finding can be related to the greater prevalence of emotional disorders amongst women (Bacigalupe & Martín, 2021). Regarding age, it is the lower-year undergraduate students that show higher levels of distress. These differences have been put down to the greater ability to affront academic problems and better future professional prospects of students in the final years of their studies (Servidio et al., 2022; Vural & Yigitoglu, 2021). Nevertheless, the systematic review and meta-analysis of studies involving older, doctorate students carried out by Satinsky et al. (2021) also finds high levels of prevalence of anxiety and depression amongst this group.

Regarding the impact of COVID and lock-down in the academic realm, there is consensus in identifying a decrease in pupils' interest, performance, and motivation (da Paixão et al., 2022; Khan, 2023). The main difficulties detected revolve around an overload of work, changes in evaluation, fatigue, and irritability. Students give a negative evaluation of online classes, considering that they make maintaining attention and interest difficult and various studies also indicate that it is lower-year students that have the greatest academic problems (Chun et al., 2022; Martín-Antón et al., 2023). Online education has become a new routine for some students, but it brings about significant challenges. Not all students have access to this type of education, especially considering the social inequality prevalent in many nations (de Oliveira et al., 2020). Regarding differences between students of different branches of study, what has been studied most widely is emotional affectation. Although not confirmed in all of the studies, the data seem to indicate that it is Arts and Humanities students that show a worse emotional state, particularly when compared to students of Health Sciences, who show a higher level of psychological well-being (Sánchez Carlessi et al., 2021; Woon et al., 2021).

To sum up, even though recent research has shown that the COVID-19 pandemic has exposed university students to multiple conditions of emotional vulnerability and affected their performance and well-being, the data do not allow us to reach solid conclusions with regard to the degree of affectation and far less the current state of the matter. However, this evidence of emotional and academic problems amongst university students makes it necessary to identify the exact nature of the current problems in order to provide specific psychological help. The same opinion has been expressed by the Spanish Network of Health-Promoting Universities (Romero et al., 2022).

In this context, this study, aimed at investigating academic, interpersonal, and emotional problems of university students in the post-pandemic period, was carried out when the university was beginning to return to its normal dynamics but social isolation measures were still being applied. In order to facilitate generalization of the results to the student population of Spanish universities as a whole, the study focuses on analysing the differences between different branches and years of study, and graduate and post-graduate studies. Ultimately, it is hoped that the study will provide a tool to help in the design of preventative actions and/or treatment for specific problems currently being faced by our society.

Method

Participants

Participants are students in both state-run and private Spanish universities, doing graduate or post-graduate courses in all branches of studies. The inclusion criteria were to be an undergraduate or post-graduate student in an official face-to-face, online, or semi-online course. The exclusion criterion was to not understand Spanish – knowing the language was indispensable to understand the questionnaire. The final sample consisted of 5,221 students; 35 were excluded for not completing the tests adequately. A non-probabilistic sampling was conducted, without proportional allocation in sociodemographic and/or academic variables. The sample, with a confidence level of 95% and a margin of error for global data of 5%, is representative of the population of Spanish university students in the academic year 2022 (Ministerio de Universidades, 2022). Table 1 shows the descriptive statistics corresponding to the sociodemographic and academic variables. Figures 1-3 illustrate the academic status of the study participants and the collaborating universities.

Table 1. Sociodemographic and Academic Data of the Participants in the Study

	N	%
Total	5,221	
Age	*MD* = 22.1 (range = 16 -73)	*SD* = 5.1
Gender:		
Female	3,808	72.9
Male	1,295	24.8
Non-binary	118	2.3
Branches of study:		
Health Sciences	1,392	26.7
Engineering and Architecture	939	18.0
Social and Legal Sciences	1,196	22.9
Arts and Humanities	893	17.1
Science	801	15.3
Year of study:		
Bachelor's degree:		
1st year	1,135	21.7
2nd year	1,154	22.1
3rd year	991	19.0
4th year	1,134	21.7
5th year	219	4.2
6th year	39	0.7
Master's	388	7.4
Doctorate	161	3.1

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical

Universidad Autónoma de Barcelona/ UAB	Universidad de León/ UDL
Universidad Autónoma de Madrid/ UAM	Universidad de Málaga/ UMA
Universidad Complutense de Madrid/ UCM	Universidad de Murcia/ UM
Universidad de Alcalá/ UAH	Universidad de Navarra/ UNAV
Universidad de Alicante/ UA	Universidad de Oviedo/ UNIOVI
Universidad de Almería/ UAL	Universidad de Salamanca/ USAL
Universidad de Barcelona/ UB	Universidad de Santiago de Compostela/ USC
Universidad de Burgos/ UBU	Universidad de Sevilla/ US
Universidad de Cádiz/ UCA	Universidad de Valencia/ UV
Universidad de Castilla la Mancha/ UCLM	Universidad de Valladolid/ UVA
Universidad de Córdoba/ UCO	Universidad del País Vasco/ UPV/EHU
Universidad de Extremadura/ UEX	Universidad Isabel I/ UI1
Universidad de Granada/ UGR	Universidad Nacional de Educación a Distancia/ UNED
Universidad de Huelva/ UHU	Universidad Politécnica de Valencia / UPV
Universidad de Jaén/ UJA	Universidad Pública de Navarra/ UPNA
Universidad de La Coruña/ UDC	Universidad Rey Juan Carlos / URJC
Universidad de La Laguna/ ULL	Universidad de Vigo/ UVIGO
	Universidad de Zaragoza/ UNIZAR

Figure 1. Universities Participating in the Study.

standards and with the General Data Protection Regulation (GDPR). All the respondents granted permission for inclusion by reading the introductions for the research and provided voluntary response.

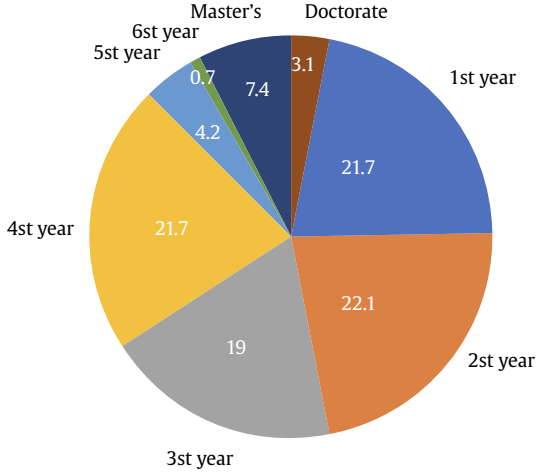

Figure 2. Distribution of Participants by Year of Study (%).

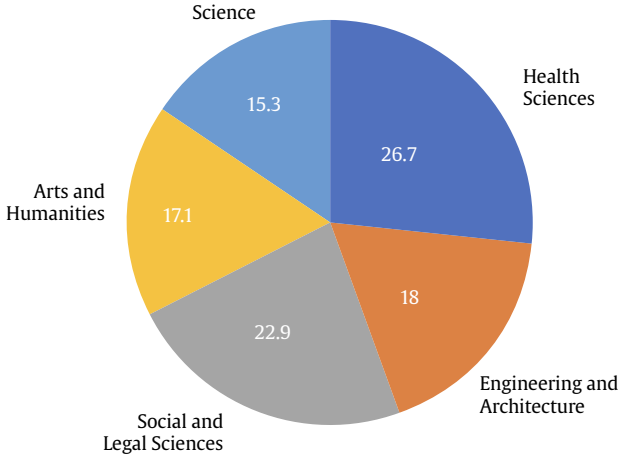

Figure 3. Distribution of Participants by Branches of Study (%).

Variables and Measures

The variables examined to address the objectives of the study encompassed: (a) academic: year (Undergraduate 1st, 2nd, 3rd, 4th, 5th, 6th year, Master's, Doctorate) and branches of study (Health Sciences, Engineering and Architecture, Social and Legal Sciences, Arts and Humanities, Sciences); (b) academic performance (method of study, academic performance, work overload, fear of speaking in public); (c) interpersonal relationships (talk about and seek help for personal problems, expressing opinions and emotions, relationships with family and relationships with peers); (d) emotional problems (distancing oneself from problems, stress and physical discomfort, perception of inability to face the future, reduction of relevant activities, anxiety, depression); to gather reliable information on these variables (b-d), two standardized questionnaires were administered, the NPAQ (Fernández-Rodríguez et al., 2019) and the HAD (Zigmond & Snaith, 1983); and (e) perception of changes attributed to the COVID-19 pandemic that were assessed using an 8-item ad hoc Likert scale (AFECTAcovid).

Evaluation of the Need for Psychological Assistance Questionnaire (NPAQ)

The Evaluation of the Need for Psychological Assistance Questionnaire (NPAQ) (Fernández-Rodríguez et al., 2019) consists of 12 items which evaluate university students' distress in three areas: academic performance (items 1-4), interpersonal relationships (items 5-8), and emotional state (items 9-12) (see Table 2). Each item is scored from *nothing* (0) to *a lot* (4). Higher values are indicative of greater difficulty/distress. The exploratory factor analysis revealed a structure adjusted to a three-factor model, which explained 63% of the total variation. The values of internal consistency of the test were between moderate and high, with a Cronbach alfa of .83 for the total score, α = .65 for the academic achievement scale, α = .81 for the interpersonal relationships scale, and α = .70 for emotional distress. The scores in the questionnaire showed a significant correlation with several standardized measures of anxiety, depression, and general distress (BSI; Derogatis, & Melisaratos, 1983). In the sample used the reliabilities obtained were α = .60 for academic performance, α = .71 for interpersonal relationships, α = .71 for emotional distress, and α = .81 for the total scale.

Hospital Anxiety and Depression Scale (HADS)

The HADS (Zigmond & Snaith, 1983) contains 14 items which evaluate responses regarding anxiety and depression (0-3 points). It has a bifactorial structure and includes one subscale for anxiety (HADS-A) and another for depression (HADS-D). Scores above 8 are indicative of possible/clinical cases and scores above 11 are

Table 2. Academic, Interpersonal, and Emotional Problems of Spanish University Students (CNAP; Fernández-Rodríguez et al., 2019). Comparison between Different Levels of Study

	1st Y	2nd Y	3rd Y	4th Y	5th Y	6th Y	Master's	Doctorate	Total				
	M (*SD*)									*F*	Sig	h^2	Post hoc
1. Problems with study method	3.15 (1.17)	3.06 (1.16)	2.99 (1.16)	2.90 (1.19)	2.94 (1.19)	3.08 (1.22)	2.51 (1.08)	2.55 (1.17)	2.97 (1.17)	16.69	.000*	.022	a with c, d, g, h; b with d, g, h; g with a, b, c, d, e h with a, b, c, d, e
2. Dissatisfaction with performance	2.42 (1.15)	2.41 (1.18)	2.42 (1.16)	2.28 (1.13)	2.42 (1.20)	2.90 (1.29)	1.92 (.97)	1.87 (.98)	2.36 (1.14)	18.38	.000*	.024	d with f, g, h; g with a, b, c, d, e, f; h with a, b, c, d, e, f,
3. Work overload	3.24 (1.23)	3.48 (1.19)	3.57 (1.15)	3.40 (1.23)	3.71 (1.17)	3.92 (1.09)	3.22 (1.25)	3.19 (1.27)	3.41 (1.21)	11.08	.000*	.015	a with b, c, d, e, f; d with a, c, e; g with b, c, e, f; h with c, e, f
4. Fear of speaking in public	2.94 (1.42)	2.94 (1.43)	2.96 (1.40)	2.95 (1.40)	2.92 (1.42)	2.97 (1.35)	2.62 (1.23)	2.57 (1.33)	2. 91 (1.41)	4.11	.000*	.006	g with a, b, c, d; h with a, c, d
5. Problems with peer relationships	2.49 (1.32)	2.45 (1.31)	2.41 (1.33)	2.40 (1.32)	2.41 (1.32)	2.10 (1.24)	2.30 (1.25)	2.15 (1.11)	2.41 (1.31)	2.46	.016*	.003	
6. Avoid seeking help	3.31 (1.35)	3.27 (1.36)	3.15 (1.35)	3.08 (1.34)	3.09 (1.31)	2.87 (1.45)	3.11 (1.31)	2.96 (1.16)	3.19 (1.34)	4.42	.000*	.006	d with a, b
7. Avoid expressing emotion	2.82 (1.26)	2.81 (1.28)	2.78 (1.25)	2.76 (1.22)	2.59 (1.18)	2.62 (1.31)	2.74 (1.22)	2.67 (1.25)	2.77 (1.24)	2.03	.048*	.003	
8. Problems with family relations	2.13 (1.28)	2.19 (1.26)	2.17 (1.29)	2.20 (1.30)	2.25 (1.29)	1.87 (1.10)	1.79 (.93)	1.88 (.96)	2.17 (1.27)	1.84	.076	.002	
9. Stress, physical discomfort	2.97 (1.39)	3.07 (1.38)	3.13 (1.38)	3.13 (1.35)	3.17 (1.36)	3.05 (1.52)	3.06 (1.34)	3.06 (1.32)	3.07 (1.29)	1.45	.180	.002	
10. Inability to distance oneself problems	3.25 (1.29)	3.32 (1.24)	3.31 (1.26)	3.44 (1.27)	3.36 (1.29)	3.51 (1.27)	3.30 (1.23)	3.32 (1.22)	3.33 (1.26)	2.14	.037*	.003	a with d
11. Inability to face the future	2.77 (1.33)	2.84 (1.34)	2.87 (1.38)	3.06 (1.38)	2.97 (1.30)	2.56 (1.14)	2.76 (1.29)	2.63 (1.28)	2.87 (1.25)	6.19	.000*	.008	d with a, b, c, g, h
12. Reduction activity	2.71 (1.38)	2.74 (1.39)	2.45 (1.35)	2.38 (1.41)	2.68 (1.43)	2.46 (1.33)	2.42 (1.29)	2.31 (1.27)	2.66 (1.38)	5.73	.000*	.008	g with a, b, c; h with a, b, c

Note. a = 1st year; b = 2nd year; c = 3rd year; d = 4th year; e = 5th year; f = 6th year; g = Master's; h = Doctorate.
*Statistically significant differences at the 5 level with Bonferroni correction.

indicative of clinical cases. The sensitivity and specificity of these cut-off points are between .70 and .90. The Spanish version obtains internal consistency levels of .86 in both scales (Quintana et al., 2003). The values of internal consistency reliability in the study sample were .80 and .68 for anxiety and depression respectively.

Questionnaire regarding Affectation of Academic Life as a Result of COVID-19 (AFECTAcovid)

The Questionnaire regarding Affectation of Academic Life as a result of COVID-19 is an 8-item scale designed ad hoc to evaluate affectation of university students' study habits, attention and concentration, academic performance, relationships with classmates, work expectations, emotional state, state of health and consumption of substances in the wake of lock-down, and changes in academic life during COVID-19. Answers were given using a Likert-type scale with 7 options ranging from 1 = *very deteriorated* to 7 = *much better.* The internal reliability of the test was α = .79.

Procedure

In the initial phase, we established communication via email with the dean's offices and student representatives across faculties in both state-run and private Spanish universities. Our objective was to apprise them of the study' goals and procedures. Subsequently, the interested institutions used their available communication channels, such as mailing lists and webpage publications, to disseminate a web link leading to the questionnaire, accompanied by relevant instructions and comments. The data collection occurred over a three-month period through an online questionnaire hosted on the Google Forms platform. This instrument included items from selected standardized questionnaires, as well as those specifically developed ad hoc to comprehensively assess all study variables. Before completing the survey, participants were informed about the principles of anonymity, voluntariness, and the confidentiality of their responses. They were also provided with the option to exit the questionnaire at any point. Initiating the test implied explicit acceptance of the conditions. All questionnaire items were mandatory. The entire process, encompassing the design, development, data collection, and analysis phases, spanned 14 months and involved the collaborative efforts of four researchers. According to the Spanish law regulating ethical validity (Ley Orgánica 3/2018, de 5 de diciembre, de Protección de datos personales y garantía de los derechos digitales), the procedure ensured that: (1) students did not suffer any risk, (2) data were stored on a secure server, (3) anonymity was guaranteed, and (4) participants were able at any time to change their minds and decide not to participate.

Statistical Analysis

This is an observational, cross-sectional, descriptive-analytical study. A descriptive analysis of the variables of the study was carried out. To study the differences between the various branches of studies and academic years, factorial multivariate analysis of variance (MANOVA) was used, taking the year and branch of studies as factors and the mean values of each of the items of the instruments making up the questionnaire as dependent variables.

Table 3. Academic, Interpersonal and Emotional Problems of Spanish University Students (CNAP; Fernández-Rodríguez et al., 2019). Comparison between Different Branches of Study

	Health Sciences	Engineering Architecture	Social and Legal Sciences	Arts and Humanities	Science	Total				
				M (*SD*)			*F*	Sig.	h^2	Post hoc
1. Problems with study method	2.93 (1.18)	2.97 (1.18)	2.94 (1.15)	3.03 (1.18)	3.00 (1.20)	2.97 (1.17)	3.47	.008*	.003	
2. Dissatisfaction with performance	2.34 (1.16)	2.45 (1.17)	2.13 (1.03)	2.20 (1.12)	2.63 (1.22)	2.36 (1.14)	17.87	.000*	.014	a with c, d, e b with c, d, e c with a, b, e d with a, b, e e with all
3. Work overload	3.54 (1.19)	3.41 (1.23)	3.19 (1.21)	3.39 (1.24)	3.54 (1.16)	3.41 (1.21)	5.95	.000*	.005	a with c, d c with all
4. Fear of speaking in public	2.89 (1.42)	2.88 (1.40)	2.93 (1.41)	3.02 (1.44)	2.83 (1.36)	2. 91 (1.41)	1.15	.332	.001	
5. Problems with peer relationships	2.22 (1.23)	2.47 (1.36)	2.37 (1.28)	2.69 (1.37)	2.46 (1.31)	2.41 (1.31)	11.55	.000*	.009	a with all d with all
6. Avoid seeking help	3.03 (1.36)	3.30 (1.33)	3.19 (1.34)	3.29 (1.37)	3.18 (1.30)	3.19 (1.34)	7.62	.000*	.006	a with b, c, e
7. Avoid expressing emotion	2.67 (1.25)	2.84 (1.25)	2.76 (1.21)	2.87 (1.28)	2.76 (1.22)	2.77 (1.24)	3.91	.004*	.003	a with b, d
8. Problems with family relationship	2.02 (1.20)	2.09 (1.23)	2.16 (1.26)	2.44 (1.37)	2.19 (1.29)	2.17 (1.27)	9.89	.000*	.008	a with d, e d with all
9. Stress, physical discomfort	3.03 (1.36)	2.93 (1.36)	3.07 (1.35)	3.34 (1.36)	3.03 (1.41)	3.07 (1.29)	9.99	.000*	.008	d with all
10. Inab. distance oneself problems	3.25 (1.23)	3.24 (1.30)	3.38 (1.25)	3.49 (1.27)	3.33 (1.26)	3.33 (1.26)	5.91	.000*	.005	d with a, b
11. Inability to face the future	2.62 (1.30)	2.78 (1.34)	2.93 (1.34)	3.19 (1.39)	2.95 (1.35)	2.87 (1.25)	17.50	.000*	.013	a with c, d, e d with all
12. Reduction activity	1.97 (1.16)	2.17 (1.20)	1.95 (1.33)	2.82 (1.24)	2.42 (1.27)	2.66 (1.38)	15.97	.000*	.012	a with all c with a, d

Note. a = Health Sciences; b = Engineering and Architecture; c = Social and Legal Sciences; d = Arts and Humanities; e = Science.
*Statistically significant differences at the 5 level with Bonferroni correction.

In cases where MANOVA proved to be statistically significant, each of the dependent variables were then analysed individually. When ANOVA was statistically significant in some of the factors, a posteriori comparisons were carried out using Bonferroni correction. In cases where the Year x Branch interaction was statistically significant, a simple effects analysis was carried out. As a measure of effect size, a partial eta squared test was used. The analyses were carried out using the SPSS27 program.

Results

Academic, Interpersonal and Emotional Problems (NPAQ; Fernández-Rodríguez et al., 2019)

The results of the factorial MANOVA for the comparison of groups according to year and branch of studies based on the NPAQ do not show statistically significant Year x Branch interaction (F =1.14, p = .057). However, significance was shown to exist in the effects of Year (F = 5.14, p = .000, η^2 = .012) and of the Branch (F = 6.97, p = .000, η^2 = .016) although, in both cases, with very small effect sizes.

Academic Performance

Concerning academic performance (NPAQ, items 1-4) (see Tables 2 and 3), *Work Overload* is the most relevant of the academic problems evaluated. Mean scores show between quite a lot of and a lot of overload. Regarding the different years (Table 2), difficulties increase as the undergraduate degree progresses, but decrease in postgraduate studies. Post hoc comparisons using Bonferroni show significant differences between years. Regarding differences between branches (Table 3), the greatest overload is reported by Sciences and Health Sciences students, who show statistically significant differences compared to Arts and Humanities and Social Sciences students. Social Science students, with a lower MD, also show significant differences compared to the rest of branches (Table 3).

The mean values show that the participants have quite a lot of problems with the *Method of Study*, with no differences between branches of study (Table 3). Problems are greater in the 1st, 2nd, and 6th years, but decrease in post-graduate studies. Post hoc comparisons confirm the significance of these differences between years (Table 2).

Mean values for expectations regarding *Academic Performance* indicate that these are to a large extent in line with actual academic results, this being more so amongst postgraduate students than amongst undergraduates. Furthermore, Master's and Doctorate students show a significant difference compared to all the undergraduate years (Table 2). Between branches (Table 3), Science students show a greater degree of dissatisfaction than the remaining branches. Other specific differences between certain branches can also be observed (Table 3).

Fear of Speaking in Public, according to the MD, can be seen to be a problem which is close to "quite intense" in all the years of undergraduate studies, but which decreases in postgraduate studies (Table 2). It appears transversally between branches of study with the same intensity, with no difference between them (Table 3).

Interpersonal Relationships

With regard to interpersonal problems (NPAQ, items 5-8) (Tables 2 and 3), the MD show a fairly high degree of avoidance in *Talk about and Seek Help for Personal Problems* amongst students of all years (undergraduate and postgraduate) and all branches of study. Post hoc comparisons show statistically significant differences between 4th year undergraduate students and 1st- and 2nd year students, who report less

Table 4. Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983). Comparison between Different Brunches of Study

	Health Sciences	Engineering Architecture	Social and Legal Sciences	Arts and Humanities	Science	Total				
				M (*SD*)			*F*	Sig.	h^2	Post hoc
HAD-A	9.96 (4.54)	9.91 (4.41)	10.49 (4.54)	11.25 (4.54)	10.19 (4.46)	10.33 (4.53)	10.61	.000*	.008	a con c, d b con c, d c con a, b, d d con todas e con d

Note. a = Health Sciences; b = Engineering and Architecture; c = Social and Legal Sciences; d = Arts and Humanities; e = Science.
*Statistically significant differences at the 5 level with Bonferroni correction.

difficulty (Table 2). Health Sciences students also indicate less avoidance (Table 3).

Regarding *Expressing Opinions and Emotions* and, according According to the MD, this is avoided to a fairly large extent by students in all years and no significant differences were found between them (Table 2). Regarding branches of study, Health Sciences students are shown to avoid this circumstance significantly less than Engineering or Arts and Humanities students (Table 3).

With respect to *Relationships with Family and Relationships with Peers,* data suggest that this area does not present any noteworthy difficulties for the average university student, regardless of the year of undergraduate or postgraduate studies (Table 3). By branch of studies, in both conditions, whilst Health Sciences students appear to have significantly less problems than the rest, Arts and Humanities students have more (Table 3).

Emotional Problems

As for emotional problems (NPAQ, items 9-12) (Tables 2 and 3), *Distancing Onself from Problems* is identified as the condition which generates greatest difficulties amongst university students, followed by *Stress and Physical Discomfort.* Both conditions, in all years (Table 2) and branches (Table 3) reach MD which indicate between quite a lot of and a lot of affectation.

In respect of *Perception of Inability to Face the Future,* only 4th-year students perceive this experience as being rather problematic, there existing a statistical differentiation regarding the rest of the years (Table 2). In these three conditions it is the Arts and Humanities students that report the greatest difficulties, significantly greater than the rest of the branches (Table 3).

Regarding *Reduction of Relevant Activities* and, according to mean scores, it occurs between a little and quite a lot in students of all academic years and branches. Post-graduate students, with lower MD, have less problems than 1st-, 2nd-, and 3rd year undergraduates in maintaining relevant activities (Table 2). Health Sciences students, whose mean scores indicate less giving up of activities, can be differentiated from the rest of branches (Table 3).

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)

The results of the factorial MANOVA for comparing groups based on year and branch of studies with regard to the *HADS-A* subscale indicate that the interaction Year x Branch was not statistically significant (F = 1.23, p = .206), and neither were the effects of the Year (F = 1.33, p = .234, η^2 = .002). Those of the Branch, however, were (F = 10.61, p = .000, η^2 = .008), albeit with a small effect size.

Participants from the branch of Arts and Humanities reach mean scores which indicate clinical cases of anxiety. In the rest of the branches of study, the MD are compatible with values of probable clinical cases

Table 5. Affectation of Academic Life as a Result of COVID-19 (AFECTAcovid, ad hoc). Comparison between Different Levels of Study

	1st Y	2nd Y	3rd Y	4th Y	5th Y	6th Y	Master's	Doctorate	Total				
					M (*SD*)					*F*	Sig.	h^2	Post hoc
1. Study habits	3.24 (1.43)	3.29 (1.41)	3.25 (1.36)	3.35 (1.39)	3.25 (1.40)	3.31 (1.00)	3.38 (1.17)	3.45 (1.16)	3.30 (1.37)	1.60	.132*	.002	
2. Attention concentration	2.77 (1.38)	2.72 (1.36)	2.64 (1.34)	2.78 (1.38)	2.69 (1.29)	2.64 (1.18)	2.82 (1.22)	3.08 (1.35)	2.74 (1.35)	3.26	.002*	.004	b with h c with h h with b, c
3. Academic performance	3.21 (1.40)	3.24 (1.39)	3.31 (1.38)	3.46 (1.43)	3.29 (1.35)	3.18 (1.23)	3.58 (1.21)	3.54 (1.24)	3.33 (1.39)	6.85	.000*	.009	a with d, g b with d, g c with g d with a, b g with a, b, c
4. Relationships with classmates	4,53 (1,60)	4.43 (1.63)	4.13 (1.58)	3.97 (1.51)	3.65 (1.53)	3.95 (1.45)	3.90 (1.35)	3.82 (1.17)	4.20 (1.57)	19.21	.000*	.025	a with c, d, e, g, h b with c, d, e, g, h c with a, b, e d with a, b e with a, b, c g with a, b h with a, b
5. Work expectations	3.45 (1.51)	3.41 (1.46)	3.29 (1.40)	3.25 (1.53)	3.25 (1.51)	3.05 (1.07)	3.34 (1.49)	3.37 (1.55)	3.34 (1.48)	2.92	.005*	.004	a with d d with a
6. Emotional state	2.94 (1.50)	2.93 (1.47)	2.84 (1.47)	2.88 (1.47)	2.70 (1.35)	2.90 (1.41)	2.96 (1.39)	3.15 (1.35)	2.90 (1.46)	2.27	.027*	.003	
7. State of health	3.22 (1.45)	3.13 (1.35)	3.06 (1.37)	3.03 (1.34)	3.03 (1.26)	3.13 (1.28)	3.11 (1.27)	3.18 (1.23)	3.11 (1.36)	2.00	.052*	.003	
8.Consumption of substances	4.19 (1.42)	4.11 (1.31)	4.14 (1.31)	4.11 (1.3)	3.99 (1.3)	3.92 (1.29)	4.15 (1.31)	4.13 (1.27)	4.13 (1.33)	0.509	.829	.001	

Note. a = 1st year; b = 2nd year; c = 3rd year; d = 4th year; e = 5th year; f = 6th year; g = Master's; h = Doctorate.
*Statistically significant differences at the 5 level with Bonferroni correction.

Table 6. Affectation of Academic Life as a Result of COVID-19 (AFECTAcovid, ad hoc). Comparison between Brunches of Study

	Health Sciences	Engineering Architecture	Social and Legal Sciences	Arts and Humanities	Science	Total				
	M (*SD*)						*F*	Sig.	h^2	Post hoc
1. Study habits	3.42 (1.37)	3.22 (1.36)	3.31 (1.38)	3.17 (1.39)	3.27 (1.35)	3.30 (1.37)	3.03	.016*	.002	a with b, d b with a d with a
2. Attention concentration	2.83 (1.33)	2.74 (1.33)	2.76 (1.34)	2.65 (1.43)	2.69 (1.35)	2.74 (1.35)	2.87	.022*	.002	a with d d with a
3. Academic performance	3.32 (1.32)	3.27 (1.40)	3.46 (1.41)	3.36 (1.40)	3.18 (1.41)	3.33 (1.39)	1.31	.263	.001	b with c c with b, e e with c
4. Relationships classmates	4.27 (1.59)	4.13 (1.56)	4.24 (1.54)	4.10 (1.64)	4.23 (1.54)	4.20 (1.57)	1.22	.300	.001	
5. Work expectations	3.62 (1.46)	3.59 (1.46)	3.25 (1.46)	2.93 (1.46)	3.19 (1.47)	3.34 (1.48)	21.15	.000*	.016	a with c, d, e b with e c with a, b, d d with all e with a, b, d
6. Emotional state	3.01 (1.43)	2.92 (1.39)	2.88 (1.51)	2.74 (1.52)	2.93 (1.43)	2.90 (1.46)	3.77	.005*	.003	a with d d with a
7. State of health	3.16 (1.33)	3.20 (1.35)	3.05 (1.39)	2.96 (1.39)	3.18 (1.34)	3.11 (1.36)	3.61	.006*	.003	a with d b with d d with a, b, e e with d
8. Consumption of substances	4.11 (1.29)	4.20 (1.28)	4.19 (1.41)	4.07 (1.41)	4.06 (1.26)	4.13 (1.33)	2.33	.054	.002	

Note. a = Health Sciences; b = Engineering and Architecture; c = Social and Legal Sciences; d = Arts and Humanities; e = Science.
*Statistically significant differences at the 5 level with Bonferroni correction.

(Table 4). In post hoc comparisons using Bonferroni, the Arts and Humanities branch shows a statistically significant difference from the rest. The differences between Social Sciences branch compared to Health Sciences and Engineering and Architecture are equally significant, although with less affectation in the latter (Table 4).

In the *HAD-D* subscale, participants' MD grouped together by branches and years showed values indicating no case. Only in the cases of 5th-year undergraduate (MD = 8.24, *SD* = 4.22) and doctorate (MD = 8.47, *SD* = 3.27) Arts and Humanities students were the mean values compatible with probable clinical cases. Consequently, no analysis was carried out of the differences between years and branches as these were not interpretable due to the lack of clinical variability amongst the participants.

Affectation of Academic Life as a Result of COVID-19 (AFECTAcovid, ad hoc)

The results of the factorial MANOVA to compare groups by year and branch of studies according to the AFECTAcovid showed no statistically significant interaction Year x Branch ($F = 1.17$, $p = .052$). However, the effects of Year ($F = 5.32$, $p = .000$, $\eta^2 = .008$) and those of Branch of Studies ($F = 4.49$, $p = ,000$, $\eta^2 = .007$) did prove to be significant with a very small effect size.

In the variables studied, the mean of the scores in the different years (Table 5) and branches of study (Table 6) indicate that *Attention and Concentration and Emotional State* are the conditions in which students perceive the greatest deterioration as a result of the pandemic. In contrast, *Relationships with Classmates* and *Consumption of Addictive Substances* show an improvement. In the rest of the conditions, moderate deterioration is perceived.

Analysis of the post hoc comparisons shows that, as a result of the pandemic, the *Study Habits* of Engineering and Architecture and of Arts and Humanities students are significantly more deteriorated than those of Health Sciences students (Table 6). No differences are observed between years (Table 6).

Regarding *Attention and Concentration*, doctoral students show less affectation that 2nd- and 3rd-year undergraduate students (Table 5). There are differences between students of Health Sciences and of Arts and Humanities, with greater affectation in the latter group (Table 6).

In *Academic Performance*, 1st-, 2nd-, and 3rd-year undergraduate students show greater deterioration than 4th-year or Master's students (Table 5). Engineering, Architecture, and Science students, with a perception of greater affectation, show a significant difference compared to Social Science students, who perceive less changes (Table 6).

With regard to *Relationships with Classmates*, 3rd-, 4th- and 5th-year undergraduates, Master's and Doctorate students indicate more deterioration than 1st- and 2nd-year undergraduates (Table 5).

First-year undergraduates are also shown to be less affected by COVID-19 in their *Work Expectations* than 4th-year undergraduates. By branches, while Arts and Humanities are shown to be more affected than the rest of students, students of Health Sciences and of Science and Architecture indicate significantly less affectation in their work expectations than those of Social Sciences and Sciences (Table 6).

Regarding *Emotional State*, only students of Arts and Humanities report significantly greater deterioration than those of Health Sciences (Table 6). The situation is similar with regard to the deterioration perceived in *State of Health*, where students of Arts and Humanities report significantly more deterioration than those of Health Sciences, Engineering and Architecture, and Science (Table 6).

Discussion

In recent years, data indicate an increase in depression and anxiety amongst university students (Jehi et al., 2022; Lipson et al., 2022; Liyanage et al., 2022; Xu & Wang, 2023). Apart from that, it seems likely that the COVID-19 pandemic and lock-down acted as a trigger for emotional distress, although the post-pandemic effects in the university sphere are yet to be determined. This study analyses the presence of a series of academic, interpersonal, and emotional problems underlined in previous research (Fernández-Rodríguez et al, 2019; Ishii et al., 2018) and the differences between different

academic years (undergraduate and postgraduate) and branches of study.

Mean values of answers gathered show a profile of a post-pandemic Spanish university student who is overloaded with academic work, who reports having quite a lot of or a lot of difficulty in distancing him/herself from personal problems and with just as much difficulty in asking for help, who feels quite tense, suffers from physical discomfort, and whose most frequent emotional complaint is compatible with clinical anxiety. Furthermore, he/she perceives the pandemic to have had quite a negative effect on his/her emotional state and ability to concentrate on academic tasks. This profile of predominant anxiety resembles what has been observed in other recent studies which underline the striking increase in anxiety in the wake of the pandemic (Jacobo-Galicia et al., 2021; Vural, & Yigotoglu, 2021).

Our data, however, do not confirm that depression amongst university students has increased to the same extent as anxiety. The mean values in the HADS-D (Zigmond & Snaith, 1983) rule out the predominance of either clinical cases or even probable clinical cases of depression amongst the participants. Other studies carried out before the pandemic found more comparable levels of anxiety and depression symptomatology in university students and even suggested a predominance of depression (Auerbach et al., 2018; Dyffy et al., 2019; Fernández-Rodríguez et al., 2019). This disproportionate increase in the emotional complaints must be explained in the context resulting from the pandemic. COVID-19 led to changes and threats which were both constantly changing and difficult or impossible to predict or control in every area of daily life. This circumstance facilitates all kinds of worries and offers an extremely favourable context for the development of distress, particularly if the person becomes trapped, focusing on his/her worries whilst trying to alleviate the distress by avoiding the situations/experiences which are unpleasant or threatening. These strategies, both of which are patterns of behaviour involved in the development and maintaining of anxiety responses (Fernández-Rodríguez et al., 2022; Fernández-Rodríguez et al., 2018; Hayes et al., 2011), appear to abound amongst the participants in this study. It suffices to observe how these students not only stand out for their high scores in anxiety but also in reporting between quite a lot of and a lot of difficulty in distancing themselves from their worries (NPAQ, item 10) and between quite a lot of and a lot of avoidance of aversive experiences/emotions (NPAQ, items 6 and 7). On the other hand, a loss of interest in and reduction of relevant activities (NPAQ, item 12), a behaviour directly involved in the development and maintaining of depression (Fernández-Rodríguez et al., 2022; Fernández-Rodríguez et al., 2018; Kanter et al., 2010) shows only a moderate presence. This fact can clearly be related to the lower levels of depressive symptomatology amongst the participants.

In any case, this single evaluation does not suffice to state conclusively that the two patterns characterise the participants. Nor should we overlook the fact that, as a result of the pandemic, there has been an increase in the attention paid to psychological problems by a multitude of social and health-related organisms and by the media. This may have facilitated the identification or recognition of these emotions and also increase social acceptance of them. Attention should also be paid to other unique characteristics of the current context which affect young people in particular, such as difficulties in being able to leave home and become independent, employment stability, or a culture focused on the individual, all of which can increase social and emotional vulnerability. Furthermore, it is important to stress that, although the HADS (Zigmond & Snaith, 1983) is an instrument whose properties have made it one of the most suitable tests for the screening of anxiety and depression (Terol-Cantero et al., 2015; Wu et al., 2023) and it is widely used in studies with university students (Kareem et al., 2022; Sakai et al., 2022), the diagnosis of an anxiety disorder requires a detailed clinical evaluation. This same supposition can be applied to the majority of population studies, which, despite using valid measures, are not (nor are they intended to be) sufficient to establish a psychopathological diagnosis.

Interpersonal problems, relationships with family members and peers and relationships in the home are not shown to be relevant problems and may have played a role in protecting the university students against emotional distress (Wang et al. 2023; Xu & Wang, 2023). Similarly, it is also important to stress that, on average, the pandemic and lock-down did not affect the participants' relationships with their classmates. Indeed, 1st-year students reported an improvement in relationships when face-to-face lectures were resumed.

It is important to point out that the relevance of the problems identified does not change substantially when they are analysed by academic years or branches of study. This transversality has also been reported in other studies (Jehi et al., 2022; Liyanage et al., 2022). There is greater variation between years with regard to academic problems, as shown in other studies (Chun et al., 2022; da Paixão et al., 2022). It is students in the first years of their university studies that have most difficulty in developing an efficient working method and also who report the greatest deterioration in all academic matters as a result of the pandemic. Although these difficulties decrease as students progress from one year to the next, the data always indicate a (more or less serious) problem. It has been suggested that the lack of face-to-face classes may have been one of the principal factors to explain academic problems during the pandemic (Busch et al., 2022). However, this study, conducted after the resumption of face-to-face classes, continues to emphasize the significance of academic issues, particularly an overload of work. While students' academic performance is influenced by various factors, addressing the enhancement of study skills and habits remains an ongoing challenge within the university context. It is crucial to note that these competencies impact performance, expectations of academic success, and emotional distress (Khan, 2023; Sanci et al., 2022). With regard to online assessment, although it initially generated insecurity during the pandemic, several studies now support the reliability, validity, and efficiency of this modality. This suggests the practicality of incorporating and enhancing online learning platforms, facilitating the development of a suitable and cohesive assessment strategy aligned with the specific learning environment (Fernández-Castro et al., 2022; Sánchez Cabrero et al., 2021). Asynchronous online resources can enhance student autonomy. Nevertheless, the literature emphasizes the importance of relationships among students and between students and teachers for student well-being. Learning experiences through human interaction cannot be replaced; technology can only complement them (Kiltz et al., 2023).

In the comparison between branches of study, one peculiarity observed in other research (Sánchez Carlessi et al., 2021; Woon et al., 2021) is the fact that it is the students of Arts and Humanities that report the greatest interpersonal and emotional difficulties, particularly when compared to students of Health Sciences, who always report less problems. It has been suggested that these difficulties may be associated with the worst job prospects, which is always greater amongst students of Arts and Humanities. In any case, the differences between branches of studies have a low effect size, making it impossible to conclusively identify a characteristic profile for each one, as has also been the case in other studies. Regarding worries about the future, 4th-year undergraduates also expressed a fairly high degree of concern, which, in this case, could be largely put down to the need to take work-related and academic decisions associated with graduation. The participants' mean evaluations also suggested that COVID did not lead to a noteworthy deterioration in students' expectations regarding the future.

Limitations

One of the main limitations of this study is that it was not possible to fully guarantee fulfilment of participation criteria, which could compromise to some extent the validity of the sample and the interpretation of the results. Nevertheless, the coincidence of our results with those reported in other studies and the representative size of our sample led us to believe that the data could be extrapolated to the general university population. Among the participants, the majority identify as female (72.9%). Considering that 55.6% of students enrolled in Spanish universities in 2022 were women, it is appropriate to state that men would be underrepresented in our study. However, among university students, men and women are not represented in the same proportion. In this academic year, women made up 71.4% of the enrolled student body in Health Sciences and 62.2% in Arts and Humanities (Ministerio de Universidades, 2022). In any case, ensuring proper sociodemographic and academic stratification of the sample is crucial to control for the effects of these variables as modulators of results. For example, the high presence of women might be overestimating the impact of emotional issues given the higher prevalence of emotional disorders among women (Bacigalupe and Martin, 2021). Regarding students identifying as non-binary, data interpretation is challenging due to the limited literature on the LGBQ community among university students. The diverse gender representation and its emotional implications underscore the need for future research to address this specificity (Orellana et al., 2022). Furthermore, to enhance the reliability of the information, additional studies will be necessary that employ diverse and varied measures of a single variable over time, ensuring adequate psychometric assurances. In this context, it is essential to note that the Academic Performance subscale in the study sample exhibited a reliability below desirable levels, which compromises the ability to draw meaningful conclusions based on these data.

Conclusion

This study identified specific academic and emotional problems with a high degree of prevalence and transversality in all the years and branches of study of Spanish universities. These findings can provide valuable information for university psychological support services to assess the identified issues among their students and subsequently develop specific interventions. Prevention and treatment of these problems is something which must belong to the concerns and competences of universities, especially since the therapeutic effect of psychological assistance for university students has repeatedly been identified as a factor which helps to prevent university dropouts and enhances performance and quality of life.

Conflict of Interest

The authors of this article declare no conflict of interest.

Author Contributions

Concepción Fernández-Rodríguez: conceptualization, project administration, investigation, writing, review and editing, and supervision. Laura Serrato Romero: data collection, visualization, review and editing. Sandra Soriano Moreno: data collection, visualization, review and editing. Marcelino Cuesta: methodology, review and editing.

Raw data are available online: Mendeley Data, V1, doi: 10.17632/ywnbw7rf6s.1.

References

Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D., Green, J., Hasking, P., Murray, E., Nock, M., Pinder-Amaker, S., Sampson, N., Stein, D., Vilagut, G., Zaslavsky, A., & Kessler, R. C. (2018). WHO world mental health surveys international college student project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology, 127*(7), 623-638. https://doi.org/10.1037/abn0000362

Bacigalupe, A., & Martín, U. (2021). Gender inequalities in depression/anxiety and the consumption of psychotropic drugs: Are we medicalising women's mental health? *Scandinavian Journal of Public Health, 49*(3), 317-324. https://doi.org/10.1177/1403494820944736

Busch, C. A., Mohammed, T. F., Nadile, E. M., & Cooper, K. M. (2022). Aspects of online college science courses that alleviate and exacerbate undergraduate depression. *PLoS One, 17*(6), Article e0269201. https://doi.org/10.1371/journal.pone.0269201

Chun, Y. E., Hwang, H. Y., & Lee, H. N. (2022). A study on factors influencing COVID-19 on depression and anxiety in university students. *Journal of the Korea Convergence Society, 13*(4), 583-591. https://doi.org/10.15207/JKCS.2022.13.04.583

da Paixão, G. M., Seabra, A. D., Vieira, A. C., Gorla, J. A., & Cruz, D. C. (2022). Occupational participation, stress, anxiety and depression in workers and students from Brazilian universities during the COVID-19 pandemic. *Cadernos Brasileiros de Terapia Ocupacional, 30,* Article e2952. https://doi.org/10.1590/2526-8910

de Oliveira, F. J., de Lima, L. S. A., Cidade, P. I. M., Nobre, C. B., & Neto, M. L. R. (2020). Impact of Sars-Cov-2 and its reverberation in global higher education and mental health. *Psychiatry Research, 288,* Article 112977. https://doi.org/10.1016/j.psychres.2020.112977

Derogatis, L. R., & Melisaratos, N. (1983). The brief symptom inventory: An introductory report. *Psychological Medicine, 13*(3), 595-605. https://doi.org/10.1017/S0033291700048017

Duffy, M. E., Twenge, J. M., & Joiner, T. E. (2019). Trends in mood and anxiety symptoms and suicide-related outcomes among US undergraduates, 2007-2018: Evidence from two national surveys. *Journal of Adolescent Health, 65*(5), 590- 598. https://doi.org/10.1016/j.jadohealth.2019.04.033

Fernández-Castro, A. M., Sánchez-Cabrero, R., & Eiadat, Y. H. (2022). Academic impact of sudden and unforeseen changes in the learning environment due to the COVID-19 pandemic. *International Journal of Innovation and Learning, 32*(4), 380-396. https://doi.org/10.1504/IJIL.2022.126631

Fernández-Rodríguez, C., Coto-Lesmes, R., Martínez-Loredo, V., & Cuesta-Izquierdo, M. (2022). Psychological inflexibility, anxiety and depression: The moderating role of cognitive fusion, experiential avoidance and activation. *Psicothema, 34*(2), 240-248. https://doi.org/10.7334/psicothema2021.344

Fernández-Rodríguez, C., Paz-Caballero, D., González-Fernández, S., & Pérez-Álvarez, M. (2018). Activation vs. experiential avoidance as a transdiagnostic condition of emotional distress: An empirical study. *Frontiers in Psychology, 9,* Article 1618. https://doi.org/10.3389/fpsyg.2018.01618

Fernández Rodríguez, C., Soto López, T., & Cuesta Izquierdo, M. (2019). Needs and demands for psychological care in university students. *Psicothema, 31*(4), 414-421. https://doi.org/10.7334/psicothema2019.78

Hayes, S. C., Strosahl, K., & Wilson, K. G. (2011). *Acceptance and commitment therapy.* Guilford Press.

Ishii, T., Tachikawa, H., Shiratori, Y., Hori, T., Aiba, M., Kuga, K., & Arai, T. (2018). What kinds of factors affect the academic outcomes of university students with mental disorders? A retrospective study based on medical records. *Asian Journal of Psychiatry, 32,* 67-72. https://doi.org/10.1016/j.ajp.2017.11.017

Jacobo-Galicia, G., Máynez-Guaderrama, A. I., & Cavazos-Arroyo, J. (2021). Miedo al Covid, agotamiento y cinismo: su efecto en la intención de abandono universitario. *European Journal of Education and Psychology, 14*(1), 1-18. https://doi.org/10.32457/ejep.v14i1.1432

Jeffries, V., & Salzer, M. S. (2022). Mental health symptoms and academic achievement factors. *Journal of American College Health, 70*(8), 2262-2265. https://doi.org10.1080/07448481.2020.1865377

Jehi, T., Khan, R., Dos Santos, H., & Majzoub, N. (2022). Effect of COVID-19 outbreak on anxiety among students of higher education: A review of literature. *Current Psychology, 42*(20), 17475-174891. https://doi.org/10.1007/s12144-021-02587-6

Kanter, J. W., Manos, R. C., Bowe, W. M., Baruch, D. E., Busch, A. M., & Rusch, L. C. (2010). What is behavioral activation? A review of the empirical literature. *Clinical Psychology Review, 30*(6), 608-620. https://doi.org/10.1016/j.cpr.2010.04.001

Karaman, M. A., Eşici, H., Tomar, İ. H., & Aliyev, R. (2021). COVID-19: Are school counseling services ready? Students' psychological symptoms, school counselors' views, and solutions. *Frontiers in Psychology, 12,* Article 647740. https://doi.org/10.3389/fpsyg.2021.647740

Kareem, R., Sethi, M. R., Inayat, S., & Irfan, M. (2022). The effect of COVID-19 vaccination on the menstrual pattern and mental health of the medical students: A mixed-methods study from a low and middle-income country. *PLOS ONE, 17*(11), Article e0277288. https://doi.org/10.1371/journal.pone.0277288

Khan, A. N. (2023). Students are at risk? Elucidating the impact of health risks of COVID-19 on emotional exhaustion and academic performance: Role of mindfulness and online interaction quality. *Current Psychology,* 1-14. https://doi.org/10.1007/s12144-023-04355-0

Kiltz, L., Trippenzee, M., Fleer, J., Fokkens-Bruinsma, M., & Jansen, E. P. W. A. (2023). Student well-being in times of COVID-19 in the Netherlands: Basic psychological need satisfaction and frustration within the academic learning environment. *European Journal of Psychology of Education, 39,* 319-339. https://doi.org/10.1007/s10212-023-00680-x

Lipson, S. K., Zhou, S., Abelson, S., Heinze, J., Jirsa, M., Morigney, J., Petterson, A., Songh, M., & Eisenberg, D. (2022). Trends in college student mental health and help-seeking by race/ethnicity: Findings from the national healthy minds study, 2013-2021. *Journal of Affective Disorders, 306,* 138-147. https://doi.org/10.1016/j.jad.2022.03.038

Liyanage, S., Saqib, K., Khan, A. F., Thobani, T. R., Tang, W. C., Chiarot, C. B., AlShurman, B., & Butt, Z. A. (2022). Prevalence of anxiety in university students during the COVID-19 pandemic: A systematic review. *International Journal Of Environmental Research and Public Health, 19*(1), Article 62. https://doi.org/10.3390/ijerph19010062

Martín-Antón, L. J., Saiz-Manzanares, M. C., Molinero-González, P., Arteaga-Cedeño, W. L., Soto-Sánchez, A., & Carbonero, M. A. (2023). Academic procrastination of Spanish pre-service teachers during the COVID-19 pandemic. *Psicología Educativa, 30*(1), 57-66. https://doi.org/10.5093/psed2023a17

Millán-Jiménez, A., Herrera-Limones, R., López-Escamilla, Á., López-Rubio, E., & Torres-García, M. (2021). Confinement, comfort and health: Analysis of the real influence of lockdown on university students during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health, 18*(11), Article 5572. https://doi.org/10.3390/ijerph18115572

Ministerio de Universidades. (2022). *Datos y cifras del sistema universitario español.* https://www.universidades.gob.es/wp-content/uploads/2022/11/Datos_y_Cifras_2021_22.pdf

Morelli, M., Chirumbolo, A., Baiocco, R., & Cattelino, E. (2021). Academic failure: Individual, organizational, and social factors. *Psicología Educativa, 27*(2), 167-175. https://doi.org/10.5093/psed2021a8

Munuera Gómez, P., Lázaro-Pérez, C., Martínez-López, J. Á., & Gómez-Galán, J. (2023). Suicidal ideation in undergraduate students of Social Work: A quantitative study. *Journal of New Approaches in Educational Research. 12*(2), 360-377. https://doi.org/10.7821/naer.2023.7.1481

Orellana, L., Alarcón, T., & Schnettler, B. (2022). Behavior without beliefs: Profiles of heteronormativity and well-being among heterosexual and non-heterosexual university students in Chile. *Frontiers in Psychology, 13,* Article 988054. https://doi.org/10.3389/fpsyg.2022.988054

Peng, P., Hao, Y., Liu, Y., Chen, S., Wang, Y., Yang, Q., & Liu, T. (2023). The prevalence and risk factors of mental problems in medical students during COVID-19 pandemic: A systematic review and meta-analysis. *Journal of Affective Disorders, 321,* 167-181. https://doi.org/10.1016/j.jad.2022.10.040

Quintana, J. M., Padierna, A., Esteban, C., Arostegui, I., Bilbao, A., & Ruiz, I. (2003). Evaluation of the psychometric characteristics of the Spanish version of the Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica, 107*(3), 216-221. https://doi.org/10.1034/j.1600-0447.2003.00062.x

Romero, A., Cruz, S., García León, A., Hoyo, A., Varela, C., Giménez, C., Corella, D., Herrera-Gutiérrez, E., López-Martí, F., Piqueras, J. A., Soto, V., Altes, L., Insúa, P., Campos, R., & de la Roca, Y. (2022). *Spanish network of health-promoting universities.* https://web.ua.es/es/universidad-saludable/imagenes/noticias/curso-2022-23/documento-consenso-salud-y-bienestar-emocional-en-las-universidades-final.pdf

Sakai, M., Nakanishi, M., Yu, Z., Takagi, G., Toshi, K., Wakashima, K., & Yoshii, H. (2022). Depression and anxiety among nursing students during the COVID-19 pandemic in Tohoku region, Japan: A cross-sectional survey. *Japan Journal of Nursing Science, 19*(3), Article e12483. https://doi.org/10.1111/jjns.12483

Sánchez-Cabrero, R., Casado-Perez, J., Arigita-Garcia, A., Zubiaurre-Ibanez, E., Gil-Pareja, D., & Sanchez-Rico, A. (2021). E-assessment in e-learning degrees: Comparison vs. face-to-face assessment through perceived stress and academic performance in a longitudinal study. *Applied Sciences, 11*(16), Article 7664. https://doi.org/10.3390/app11167664

Sánchez Carlessi, H., Yarlequé Chocas, L., Javier Alva, L., Nuñez Llacuachaqui, E., Arenas Iparraguirre, C., Matalinares Calvet, M., Gutiérrez Santayana, E., Egoavil Medina, I., Solís Quispe, J., & Fernández Figueroa, C. (2021). Anxiety, depression, somatization and experiential avoidance indicators in Peruvian university students in quarantine by COVID-19. *Revista de la Facultad de Medicina Humana, 21*(2), 346-353. https://doi.org/10.25176/RFMH.v21i2.3654

Sanci, L., Williams, I., Russell, M., Chondros, P., Duncan, A. M., Tarzia, L., Peter, D., Lim, M. S., Tomyn, A., & Minas, H. (2022). Towards a health promoting university: Descriptive findings on health, wellbeing and academic performance amongst university students in Australia. *BMC Public Health, 22*(1), 1-24. https://doi.org/10.1186/s12889-022-14690-9

Satinsky, E. N., Kimura, T., Kiang, M. V., Abebe, R., Cunningham, S., Lee, H., Lin, X., Liu, C. H., Rudan, I., Sen, S., Tomlinson, M., Yaver, M., & Tsai, A. C. (2021). Systematic review and meta-analysis of depression, anxiety, and suicidal ideation among Ph. D. students. *Scientific Reports, 11*(1), Article 14370. https://doi.org/10.1038/s41598-021-93687-7

Servidio, R., Scaffidi Abbate, C., Costabile, A., & Boca, S. (2022). Future orientation and symptoms of anxiety and depression in Italian university students during the COVID-19 pandemic: The role of resilience and the perceived threat of COVID-19. *Healthcare, 10*(6), Article 974. https://doi.org/10.3390/healthcare10060974

Terol-Cantero, M. C., Cabrera-Perona, V., & Martín-Aragón, M. (2015). Hospital Anxiety and Depression Scale (HADS) review in Spanish. [Samples. Revisión de estudios de la Escala de Ansiedad y Depresión Hospitalaria (HAD) en muestras españolas]. *Anales de Psicología/Annals of Psychology, 31*(2), 494-503. https://doi.org/10.6018/analesps.31.2.172701

Vural, B. K., & Yigitoglu, G. (2021). An investigation of stress, anxiety and depression states of university students during the COVID-19 pandemic. *Journal of Basic and Clinical Health Sciences, 6*(2), 161-171. https://doi.org/10.30621/jbachs.871615

Wang, C., Havewala, M., Fan, Q., Wang, Q., & Bali, D. (2023). The relations between COVID-19 stress, social connectedness, and mental health: A longitudinal investigation comparing Chinese and American college students. *Current Psychology.* https://doi.org/10.1007/s12144-023-04290-0

Woon, L. S. C., Leong Bin Abdullah, M. F., Sidi, H., Mansor, N. S., & Nik Jaafar, N. R. (2021). Depression, anxiety, and the COVID-19 pandemic: Severity of symptoms and associated factors among university students after the end of the movement lockdown. *PLOS ONE, 16*(5), Article e0252481. https://doi.org/10.1371/journal.pone.0252481

Wu, J., Kuan, G., Lou, H., Hu, X., Masri, M. N., Sabo, A., & Kueh, Y. C. (2023). The impact of COVID-19 on students' anxiety and its clarification: A systematic review. *Frontiers in Psychology, 14,* Article 1134703. https://doi.org/10.3389/fpsyg.2023.1134703

Xu, T., & Wang, H. (2023). High prevalence of anxiety, depression, and stress among remote learning students during the COVID-19 pandemic: Evidence from a meta-analysis. *Frontiers in Psychology, 13,* Article 1103925. https://doi.org/10.3389/fpsyg.2022.1103925

World Health Organization (WHO, 2021). *Mental Health and COVID-19: Early evidence of the pandemic's impact.* Geneva. https://www.who.int/publications/i/item/9789240036703

Zigmond A., & Snaith, R. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica, 67*(3), 361- 370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x