2023, Retos, 47, 126-137

Assessing emotional, empathic and coping skills in Spanish undergraduates in Health Sciences and Social Sciences

Evaluación de las habilidades emocionales, empáticas y de afrontamiento entre los estudiantes universitarios españoles de ciencias de la salud y de ciencias sociales

*Manuela Martínez Lorca, *Mª Carmen Zabala-Baños, *Sonia Morales Calvo,**Roberto Aguado Romo, *Alberto Martínez-Lorca

*University of Castilla-La Mancha (Spain), **Clinical psychologist. President of European Institute of Psychotherapies of Limited Time (Spain)

Abstract. Background: Higher education is considered to be one of the phases in the life cycle that produces psychological distress and academic pressure. The aim of the study was to assess to assess the emotional, empathic, and coping skills of undergraduate students of Health Sciences and Social Sciences undergraduates using an explorative approach in a cross-sectional study. Methods: A sample of 693 first-to-fourth-year students enrolled in different degree courses. We used an "ad hoc" questionnaire, the Trait Meta-Mood Scale (TMMS-24), the Interpersonal Reactivity Index (IRI), the Difficulties in Emotion Regulation Scale (DERS) and Brief COPE questionnaire. Results: We found higher scores in capacity for empathy using the IRI, in emotional intelligence by TMMS-24 and a good coping style and adaptive strategies measured on the COPE, however, emotion regulation scores in DERS were medium. We found interesting relationships between female, first-year course, sport, anxiety and degree course in empathy, emotional intelligence, adaptative strategies and emotional regulation. Conclusions: Preventive and train measures in emotional and psychosocial resources are needed in higher education to achieve the highest possible level of psycho- emotional well-being.
Keywords: emotional intelligence, empathy, regulation, subjective well-being, university students.

Resumen. Introducción: La educación superior es considerada como una de las fases del ciclo vital que produce malestar psicológico y presión académica. El objetivo del estudio fue evaluar las habilidades emocionales, empáticas y de afrontamiento de estudiantes universitarios de Ciencias de la Salud y Ciencias Sociales mediante un estudio transversal. Métodos: Un total de 693 estudiantes de primero a cuarto año matriculados en diferentes tipos de Grados de Ciencias la Salud y Ciencias Sociales. Utilizamos un cuestionario "ad hoc", la Escala Meta-Estado de Ánimo (TMMS-24), el Índice de Reactividad Interpersonal (IRI), la Escala de Dificultades en la Regulación Emocional (DERS) y el inventario breve de afrontamiento (COPE). Resultados: Encontramos puntuaciones más altas en capacidad de empatía mediante el IRI, en inteligencia emocional en el TMMS-24 y un buen estilo de afrontamiento y estrategias adaptativas medidas en el COPE, sin embargo, las puntuaciones en regulación emocional en el DERS fueron medias. Encontramos relaciones interesantes entre el sexo femenino, los estudiantes de primer curso, la realización de deporte, la ansiedad y en los grados universitarios en empatía, inteligencia emocional, estrategias adaptativas y regulación emocional. Conclusiones: Son necesarias medidas preventivas y formativas en recursos emocionales y psicosociales en la educación superior para alcanzar el mayor nivel posible de bienestar psicoemocional.
Palabras clave: inteligencia emocional, empatía, regulación, bienestar subjetivo, estudiantes universitarios.

Fecha recepción: 25-04-22. Fecha de aceptación: 04-10-22
*Manuela Martinez Lorca
manuela.martinez@uclm.es

Introduction

Entering higher education is considered to be one of the phases in the life cycle that produces the greatest anxiety and stress, resulting in high levels of psychological distress, psychopathology, mental health, self-harm and suicidal behaviour and low levels of psychological well-being in university students (Dilber, et al., 2016; Molano-Tobar et al., 2021; Morales-Rodríguez et al., 2020; Tang et al., 2018).

Several factors related to university life may represent stressors potentially leading to psychological distress or to a negative impact on academic achievement and satisfaction (e.g., academic workload, competition, financial hardship, pressure to succeed and worries about the future) (Tang et al., 2018; Zeppegno, et al., 2014). Moreover, studies on predictors of university outcomes have found educational constructs (academic self-efficacy, exams, clinical practice, grade goals, achievement motivation and effort regulation) are the strongest predictors in learning, abilities, academic performance, poor memorisation, and concentration, and even predict dropout at undergraduate and postgraduate degree level and residency training (Dilber et al., 2016; Richardson et al., 2012; Zeppegno, et al., 2014).

University presents a large number of challenges that require students to make use of personal resources to tackle novel situations in this new stage of their lives. To confront these strategies, many studies (Belaunzaran, 2019; Cañero et al., 2019; Castañeda 2016, Morales-Rodríguez et al., 2020; OECD, 2005) highlight the importance of developing systemic competencies that include inter- and intra-personal psychological resources, such as emotional intelligence, self-esteem, self-concept, social skills, social responsibility, socially responsible attitudes, problem solving and learning style preferences, suitable levels of empathy, emotional intelligence and emotion regulation. Accordingly, much attention has been placed on studying emotions, their regulation, and their implications in daily life among the student population. Much of this interest and progressive development of studies and research is due to the emergence of the concept of emo-

tional intelligence (EI), coined by Salovey & Mayer (1990), who defined IE as the capacity to identify one's own feelings and those of others, and to focus attention and thought, attending to the information provided by emotions. EI is a significant predictor of a person's social and personal functioning, and, thus, emotionally intelligent individuals are not only more able to perceive, understand and manage their own emotions, but are also better able to extrapolate this perception, understanding and management of emotions to the emotions of others (Merchán-Clavellino et al., 2019; Morales-Rodríguez et al., 2020; Vega-Hernández et al., 2017).

Additionally, empathy, as the ability to respond to others, understand their emotions and what they are thinking, and comprehend their intentions and feel what they feel, is a key factor in university students, as it contributes to the enhancement of social skills and prosocial behaviour (Morales-Rodríguez et al., 2020; Serrada-Tejeda et al., 2022; Wang et al., 2019). In many cases, university students have showed a decline in empathy scores as a result of the need to cope with new responsibilities and excessive workload in the different academic year (Serrada-Tejeda et al., 2022).

Thus, good emotional development, proper empathy, intrapersonal resources, and solid social skills may help individuals develop positive physical and psychological health, feel less psychosocial stress, achieve better academic performance, attainment and success, and develop greater life satisfaction, among other elements (Molano-Tobar et al., 2021; Morales-Rodríguez, 2020; Ordóñez, et al., 2014; Parhiala et al., 2018; Vega-Hernández et al., 2017; Villanueva et al., 2017; Wang et al., 2016). However, these intrapersonal resources are not always developed in university students, as they are effected by diverse variables, such as gender and age where the women and older students have better scores (Cañero et al., 2019; Irfan et al., 2019; Livingstone & Isaacowitz, 2018; Serrada-Tejeda et al., 2022; Quince et al., 2016), type of degree course (Balaji et al., 2019; Fernández-Rodríguez et al., 2019), engagement in physical activity or sport improve self-esteem, self-concept, social skills and emotional manage (Acebes-Sánchez et al., 2019; Adarve et al., 2019; Alvear-Galindo et al., 2014; Grasdalsmoen et al., 2020; López et al., 2021; Rivas-Espinosa et al., 2019; Tang et al., 2020), free time satisfaction (Misra & McKean, 2000), socioeconomic status (Balaji et al., 2019; Vine, et al., 2012) and type of family (Balaji et al., 2019), etc.

Incorporating these, and other higher education resources, during the years of university students' educational and professional training could help them effectively cope with stress, anxiety, emotional distress and might enhance performance (Balaji et al., 2019; Cañero et al., 2019; Dilber et al., 2016; Martínez-Lorca, et al., 2017).

The aim of the study was to assess the emotional intelligence, empathic and coping skills of undergraduate students of Health Sciences and Social Sciences, using an explorative approach in a cross-sectional study. We expected to find 1) levels of anxiety or stress; 2) different intrapersonal resources in emotional intelligence, regulation emotional and empathy and coping skills; and 3) different type of relationships between variables such as gender, age, degree (Health Sciences and Social Sciences) and do sport. A further aim of this study was to determine whether the statistically significant differences found in the variables under analysis are maintained or disappear when students that had suffered stress or anxiety were dropped from the sample. We thus hypothesised that many of the differences would disappear when students with anxiety or stress were eliminated from the overall sample, which could underline the significant impact of anxiety and stress as mediating variables.

Table 1
Socio-demographic data and characteristics of the survey

Entire Cohort	(n= 693)
Age (median, SD)	21,19 (4,74)
	Range (17-64)
Gender (n, %)	
Male	103 (14,9)
Female	590 (85,1)
Degrees (n, %)	
Health Sciences	442 (63,9)
Nursing	184 (26,6)
Speech and Language Therapy	128 (18,5)
Occupational Therapy	130 (18,8)
Social Sciences	251 (36,2)
Working Social	104 (15)
Education Social	84 (12,1)
Business Administration and Management	63 (9,1)
Course (n, %)	
First	271 (39,1)
Second	184 (26,6)
Third	135 (19,5)
Fourth	103 (14,9)
Anxiety (n, %)	
Yes	422 (60,9)
No	271 (39,1)
Do you like your degree? (n, %)	
Yes	672 (97)
No	21 (3)
Was it the correct option? (n, %)	
Yes	661 (95,4)
No	32 (4,6)
Was it your first option? (n, %)	
Yes	436 (62,9)
No	257 (37,1)
Do you go to classes frequently? (n, %)	
Yes	683 (98,6)
No	10 (1,4)
Have you studied abroad? (n, %)	
Yes	66 (9,5)
No	627 (90,5)
Would you like to study abroad? (n, %)	
Yes	332 (47,9)
No	361 (51,9)
Grant (n, %)	
Yes	386 (55,6)
No	307 (44,3)
Did you go to internship? (n, %)	
Yes	319 (46%)
No	374 (54%)
Work+study (n, %)	
Yes	109 (5,7)
No	584 (94,3)
Do you do any sport? (n, %)	
Yes	181 (26,1)
No	512 (73,9)
Do you do any extra university activity? (n, %)	
Yes	184 (26,6)
No	509 (73,4)

Methodology

Participants

The target population comprised undergraduates enrolled in Health Sciences and Social Sciences degree courses across different year groups (from first to fourth) at the University of Castilla-La Mancha on its Talavera de la Reina campus (n=693) (see Table 1).

Instruments

First, we collected background demographic information on gender, age, degree, year of study, grants, work activity and internships during the academic year, motivation in studies, regularity in class, and sports. Besides, we asked about level of anxiety of stress with this question: Have you had any episode of stress or anxiety? with two answers (yes or no).

Second, we used **Trait Meta-Mood Scale (TMMS-24)** (Fernández-Berrocal, et al., 2004; original version by Salovey et al., 1995). This consists of 24 items across three subscales evaluating emotional intelligence, that is, the meta-knowledge of the skills with which individuals deal with emotional states, on three subscales: Attention, Clarity and Repair. The attention subscale refers to the ability people have to perceive, attend or observe, and think about their own feelings and moods. Clarity measures the understanding and discrimination of individuals' own emotional states, while repair assess a person's beliefs about their ability to regulate affect and emotions. The overall scale comprises 24 items, 8 per factor, which are rated on a 5-point scale (1= Strongly agree; 5= Strongly disagree). It has good psychometric properties with an adequate Cronbach's Alpha (attention $\alpha = 0.86$), (clarity $\alpha = 0.90$) and (repair $\alpha = 0.85$).

Difficulties in Emotion Regulation Scale (DERS) (Hervás & Jódar, 2008; original version by Gratz & Roemer, 2004). The DERS is a 36-item self-report questionnaire measuring clinically significant aspects of emotion regulation. The items are grouped into six subscales: awareness (6 items), clarity (5 items), impulse (6 items), goals (5 items), non-acceptance (6 items), and strategies (8 items). The items are scored on a 5-point Likert scale (1: almost never, 5: almost always). Subscales and total scores are obtained by the sum of the corresponding items, and higher scores indicate more difficulties in emotion regulation. The DERS has good psychometric properties with a Cronbach's Alfa of α=.91 where awareness (α=.73), clarity (α=.23), impulse (α=.74), goals (α=.70), non-acceptance (α=.89), and strategies (α=.79).

The Interpersonal Reactivity Index (IRI) (Mestre et al., 2004; original version by Davis, 1983) is one of the most widely used self-report tools to measure empathy. The scale comprises 28 items distributed across four seven-item subscales that measure two concepts of empathy. The cognitive component dimensions are perspective taking (PT) and fantasy (FS), while the affective component consists of the subscales of empathy concern (EC) and personal distress (PD). It uses a 5-point Likert-type scale (1= Does not describe me well; 5= Describes me well), scored from 1 to 5, according to the degree to which the individual feels the statement describes them. The IRI has good psychometric properties with a Cronbach's Alfa of .78 and by dimensions: perspective taking (.58), fantasy (.60), empathy concern (.42) and personal distress (.45).

Brief COPE questionnaire (Morán et al., 2010; original version by Carver, 1997). The Brief COPE comprises 28 items divided into 14 subscales, of which seven represent an effective coping style: active coping (initiating direct actions, increasing efforts to eliminate or reduce stressors), planning (thinking about how to cope with the stressor, planning action strategies, steps and efforts), instrumental or social support (getting help or advice from competent individuals that know what to do), use of emotional support (getting sympathetic emotional support, understanding), positive reframing (looking for the positive and favourable aspects of the problem and trying to improve or grow from the situation), acceptance (accepting the facts, the reality of what is happening), and humour (joking about the stressor or laughing about and mocking the stressful situations). The other seven scales correspond to an ineffective coping style: self-distraction (concentrating on other projects, distracting oneself with other activities to avoid focusing on the stressor), venting (increased awareness of one's own emotional distress, tendency to express or offload such feelings), behavioural disengagement (reducing effort to cope with the stressor, even giving up trying to achieve goals that interfere with the stressor), denial (denying the reality of the stressor), religion (tendency to turn to religion in times of stress), substance use (consuming alcohol or other substances to feel good or help deal with the stressor), and, finally, self-blame (criticizing and blaming oneself for events). The items are framed in terms of actions or thoughts used as coping mechanisms, with each one scored on a 4-point scale (0= I haven't been doing this at all; 1= A little bit; 2= A medium amount; 3= I've been doing this a lot), according to the frequency with which the respondent engages in an action or has a thought. The Cronbach's alpha for the scale was .77 and by subscales: active coping (.57), planning (.55), instrumental or social support (.65), use of emotional support (.73), positive reframing (.71), acceptance (.21), humour (.77), self-distraction (.57), venting (.32), behavioural disengagement (.65), denial (.63), religion (.84), substance use (.88), and, finally, self-blame (.63).

Procedure

This research was conducted by means of a descriptive, epidemiological, cross-sectional study. Professors of the Faculty of Health Sciences and the Faculty of Social Sciences were informed by a mail of the aim of the study and their permission was requested to administer the tests in paper-based format. They were not trained. Before apply-

ing the tests, participants were informed of the objective, procedure, anonymous nature and ethical guarantees of the study and their informed consent to participate was requested. Filling out the questionnaires took between 15 and 20 minutes at the beginning and/or end of the classes where professors delivered and collected the questionnaires. Data collection were done from 4th November to 25th November 2019. Non-probability quota sampling was used (aged 18 or over, enrolled in a university degree course, years 1 to 4 and stay in classroom the day of data collection). This study received ethical approval and was supervised by the Research Ethics Commission of the Talavera de la Reina Integrated Health Service Management in Talavera de la Reina, Toledo, Spain (31/2018).

Table 2
Descriptive statistics in measures of instruments

TMMS-24	M (SD)	Min	Max
Attention	25,66 (6,91)	8	40
Clarity	23,74 (6,79)	8	40
Repair	24,93 (6,6)	10	43
DERS	**M (SD)**	**Min**	**Max**
Awareness	17,91 (4,01)	7	40
Impulse	14,42 (2,75)	8	26
Non-acceptance	14,04 (6,14)	7	35
Goals	14,88 (4,68)	5	35
Clarity	11,66 (3,72)	4	24
Strategies	15,49 (5,70)	4	35
Total	88,24 (18,03)	11	152
IRI	**M (SD)**	**Min**	**Max**
Perspective taking	24,209(4,03)	13	36
Fantasy	23,39 (5,20)	8	35
Empathic concern	27,38 (4,04)	15	43
Personal distress	17,01 (4,45)	7	35
Total	91,92 (11,42)	59	130
COPE	**M (SD)**	**Min**	**Max**
Confrontation	4,65 (1,19)	0	6
Planning	3,90 (1,34)	0	6
Social support	4,17 (1,41)	0	6
Emotional support	4,19 (1,47)	0	6
Positive reinterpretation	3,73 (1,56)	0	6
Acceptance	4,32 (1,20)	0	6
Humor	2,98 (1,89)	0	6
Self-distraction	3,93 (1,52)	0	6
Venting	2,99 (1,44)	0	6
Behavioral disengagement	1,41 (1,47)	0	6
Negation	1,94 (1,68)	0	6
Religious	1,11 (1,67)	0	6
Substance use	0,82 (1,46)	0	6
Self-blame	3,17 (1,60)	0	6

Data analysis

The data analysis was conducted using the IBM® SPSS® Statistics 22.0 computer program. For the statistical analysis, we first checked whether the variables to be statistically analysed followed a normal distribution, using the K-S test for normality. The sample does not follow a normal distribution of data, as indicated by the analysis of the Kolmogorov-Smirnov test of normality in which all the variables evaluated present a probability of less than or equal to 0.05. Therefore, for the analysis of the data, the non-parametric Mann-Whitney test was performed, which is the non-parametric test parallel to the t-test for independent samples. We also ran the Kruskal-Wallis test, the non-parametric test parallel to the analysis of variance. A confidence level of .05 was set for all statistical analyses. In addition, descriptive and frequency distribution (mainly means and standard deviations) and Chi-square independence tests were used.

Results

The survey was completed by a total of 693 college students at the University of Castilla-La Mancha. The quantitative sociodemographic characteristics of the survey and characteristics related to their activity during the academic year and the physical activity they engage in are summarised in Table 1.

Descriptive statistics in measures of instruments

Table 2 shows the descriptive statistics for each of the scales used in this work.

Relationships between anxiety and the main study variables

Table 3 shows the statistically significant differences between the variables of having suffered stress or anxiety in the main study variables.

Table 3
Significant differences in anxiety or stress in measures of instruments

	ANXIETY or STRESS			
	Yes (N= 422)	**No** (N= 271)	Z	*p*
TMMS-24				
Attention	374,77**	204,37	-4,496	≤0.000
Clarity				
Repair	330,45	372,77**	-2,718	≤0.007
DERS				
Awareness				
Impulse	368,55**	311,06	-3,727	≤0.000
Non-acceptance	371,03**	307,21	-4,113	≤0.000
Goals	359,40*	325,23	-2,202	≤0.028
Clarity				
Strategies	371,88**	305,89	-4,250	≤0.000
Total	371,01**	307,25	-4,100	≤0.000
IRI				
Perspective taking	358,57*	326,51	-2,066	≤0.039
Fantasy				
Empathic concern	367,90**	312,06	-3,600	≤0.000
Personal distress	360,70*	323,21	-2,417	≤0.016
Total	370,92**	307,38	-4,087	≤0.000
COPE				
Confrontation				
Planning				
Social support				
Emotional support				
Positive reinterpretation	331,01	361,31*	-1,999	≤0.046
Acceptance				
Humor				
Self-distraction				
Venting	357,90*	320,23	-2,492	≤0.013
Behavioral disengagement				
Negation				
Religious				
Substance use				
Self-blame	361,45**	314,82	-3,608	≤0.002

** =p<0.01; * =p<0.05

Relationships between sex and the main study variables

Table 4 reveals significant differences between sex and the different variables measured by the instruments used in this study. In general, the female participants showed statistically significant differences in many of the items,

with higher mean ranges compared to their male counterparts. When individuals with anxiety were eliminated from the sample, some of these differences disappeared, although the women continued to exhibit higher mean ranges on the variables under analysis.

Table 4
Significant differences between sex in different samples in measures of instruments

	SEX (total sample)				**SEX** (sample without anxiety)			
	Males (N= 103)	**Females** (N= 590)	Z	*p*	**Males** (N= 62)	**Females** (N= 209)	Z	*p*
TMMS-24								
Attention	276,17	359,37**	-3,895	≤0.000				
Clarity	400,37**	337,68	-2,935	≤0.003	157,27*	129,69	-2,436	≤0.015
Repair	389,03*	339,66	-2,312	≤0.021				
DERS								
Awareness								
Impulse								
Non-acceptance								
Goals								
Clarity								
Strategies								
Total								
IRI								
Perspective taking	283,43	356,96**	-3,457	≤0.001	115,04	142,22*	-2,403	≤0.016
Fantasy	288,78	356,02**	-3,159	≤0.002				
Empathic concern	243,30	363,99**	-5,675	≤0.000	104,45	145,27**	-3,586	≤0.000
Personal distress	292,97	355,29**	-2,930	≤0.003				
Total	239,33	364,68**	-5,881	≤0.000	110,51	143,56**	-2,918	≤0.004
COPE								
Confrontation	304,07	349,89*	-2,248	≤0.025	116,50	141,78*	-2,321	≤0.020
Planning								
Social support	288,60	352,63**	-3,102	≤0.002	111,17	143,37**	-2,913	≤0.004
Emotional support	288,97	352,56**	-3,078	≤0.002	109,04	144**	-3,158	≤0.002
Positive reinterpretation								
Acceptance								
Humor	403,22**	332,34	-3,393	≤0.001	162,14**	128,25	-3,030	≤0.002
Self-distraction								
Venting	296,44	351,24**	-2,650	≤0.008				
Behavioral disengagement								
Negation								
Religious								
Substance use	380,22**	336,41	-2,531	≤0.011	155,97**	130,08	-2,817	≤0.005
Self-blame								

** =p<0.01; * =p<0.05

Table 5
Significant differences between degrees in different samples in measures of instruments

	DEGREES (total sample)				**DEGREES** (sample without anxiety)			
	Health Degrees (N=442)	**Social Degrees** (N=251)	Z	*p*	**Health Degrees** (N=174)	**Social Degrees** (N=97)	Z	*p*
TMMS-24								
Attention								
Clarity								
Repair								
DERS								
Awareness								
Impulse					128,39	149,65*	-2,160	≤0.031
Non-acceptance					127,74	150,82*	-2,334	≤0.020
Goals								
Clarity								
Strategies					128,24	149,91*	-2,187	≤0.029
Total					128,18	150,03*	-2,201	≤0.028
IRI								
Perspective taking								
Fantasy								
Empathic concern	360,35*	320,84	-2,510	≤0.012				
Personal distress					128,34	149,73*	-2,160	≤0.031
Total								
COPE								
Confrontation	362,48**	308,68	-3,550	≤0.000	146,07**	117,93	-2,948	≤0.003
Planning								
Social support								
Emotional support								
Positive reinterpretation								
Acceptance								
Humor								
Self-distraction								
Venting								
Behavioral disengagement								
Negation								
Religious								
Substance use	316,90	388,99**	-5,601	≤0.000	124,43	156,76**	-4,016	≤0.000
Self-blame								

** =p<0.01; * =p<0.05

Table 6
Significant differences between courses in different samples in measures of instruments

	COURSES (total sample)				**COURSES** (sample without anxiety)			
	First (N= 271)	**Fourth** (N= 103)	Z	*p*	**First** (N= 110)	**Fourth** (N= 35)	Z	*p*
TMMS-24								
Attention								
Clarity	170,21	232,99**	-5,023	≤0.000	69,09	85,30*	-1,993	≤0.046
Repair	175,43	219,27**	-3,507	≤0.008	68,99	85,60*	-2,041	≤0.041
DERS								
Awareness								
Impulse								
Non-acceptance								
Goals	196,19**	164,63	-2,529	≤0.001				
Clarity	203,73**	144,81	-4,726	≤0.000	76,91*	60,70	-1,999	≤0.0046
Strategies	198,54**	158,46	-3,208	≤0.001				
Total	198,88**	157,55	-3,304	≤0.001				
IRI								
Perspective taking	176,04	217,65**	-3,333	≤0.001	68,15	88,24*	-2,471	≤0.013
Fantasy								
Empathic concern								
Personal distress	199,45**	156,07	-3,475	≤0.001	77,59*	58,59	-2,338	≤0.019
Total								
COPE								
Confrontation	176,96	203,81*	-1,984	≤0.047				
Planning								
Social support	194,49*	165,36	-2,391	≤0.017				
Emotional support	193,66*	167,55	-2,137	≤0.033				
Positive reinterpretation								
Acceptance								
Humor								
Self-distraction								
Venting								
Behavioral disengagement								
Negation	194,74*	164,68	-2,448	≤0.014	78,21**	56,63	-2,704	≤0.007
Religious								
Substance use								
Self-blame	200,17**	150,32	-4,058	≤0.000				

** =p<0.01; * =p<0.05

Table 7
Significant differences between do sport in different samples in measures of instruments

	SPORT (total sample)				**SPORT** (sample without anxiety)			
	Yes (N= 181)	**No** (N= 512)	Z	*p*	**Yes** (N= 76)	**No** (N= 195)	Z	*p*
TMMS-24								
Attention								
Clarity	380,38**	320,41	-2,613	≤0.009	154,70*	128,71	-2,455	≤0.014
Repair	388,38**	335,20	-3,259	≤0.001				
DERS								
Awareness								
Impulse								
Non-acceptance								
Goals								
Clarity								
Strategies								
Total								
IRI								
Perspective taking								
Fantasy								
Empathic concern								
Personal distress	307,23	359,76**	-3,049	≤0.002	116,72	143,51*	-2,535	≤0.011
Total					120,51	142,04*	-2,033	≤0.042
COPE								
Confrontation								
Planning								
Social support					118,63	142,77*	-2,337	≤0.019
Emotional support								
Positive reinterpretation								
Acceptance	373,94*	332,06	-2,507	≤0.012				
Humor					153,61*	129,14	-2,340	≤0.019
Self-distraction								
Venting								
Behavioral disengagement								
Negation								
Religious					150,48*	130,36	-2,121	≤0.034
Substance use								
Self-blame								

** =p<0.01; * =p<0.05

Relationships between degree course and the main study variables

Table 5 shows statistically significant differences between the degree course variable (Health Sciences and Social Sciences) and the study variables, for both the overall sample and the subsample without the students reporting episodes of stress or anxiety. It can be seen that new statistically significant differences appear in the subsample.

Relationships between year group and the main study variables

Comparing the students by year group (first compared to fourth), Table 6 reflects the number of statistically significant differences for each variable in both samples. When the students reporting episodes of anxiety and stress are excluded, some of the statistically significant differences are maintained.

Relationships between sport and the main study variables

In Table 7, we can see statistically significant differences between sport and the study variable. In the same idea, when the students reporting episodes of anxiety and stress are excluded, some of the statistically significant differences are maintained.

Discussion

University students are a distinct population group in a critical transitional period, where emotion management, problem-solving and coping capacity are key resources they need to develop. The present study provides important evidence in this regard.

The characteristics of the sample show that 60.9% of the participants have experienced anxiety or stress, which is consistent with other studies reporting that approximately 50% of university students have experienced significant levels of anxiety (Belaunzaran, 2019; Cañero et al., 2019; Castañeda, 2016; Morales-Rodríguez et al., 2020; Sanchis-Soler et al., 2022) or even generalized anxiety disorder (Musumari et al., 2018).

Questions about activity during the academic year showed that most of the undergraduates like, or find motivation in, the degree course they are studying and consider they made the right choice (Ministerio de Educación, Innovación y Universidades, 2019), despite it not having been the first option for 37.1%. Additionally, the majority of students attend class regularly, which contrasts with other studies that report high levels of absenteeism (Cox Méndez, 2017). As regards combining work and study, only 5.7% carried out regular work activity during the academic year, a lower level than in the work by Fernández-Rodríguez et al. (2019), which reported a rate of 14.5%, and in that by Balanza Galindo et al. (2009), where 29.6% of the students worked and studied. The participation of international exchange students was very limited, which is in line with the results of Fernández-Rodríguez et al. (2019), although almost half the students would like to participate in such programmes. As regards financial assistance, more than half the students in our study had a grant, which safeguards the possibility of university study among lower socioeconomic status families (Langa-Rosado, 2019).

Engaging in regular physical activity has benefits for an individual's physical functioning, as well as psychological benefits, because exercise and physical activity have positive associations with a good quality of life. In fact, the World Health Organisation recommend adults engage in at least 150 minutes a week of moderate-intensity aerobic exercise to promote health and relieve stress (Chow & Choi, 2019). However, although León et al. (2020) found an important number of university students that do physical exercise for fitness, health and enjoy, our results in line with other studies (Alvear-Galindo et al., 2014), showed that few students do sport or engage in physical activity (only 26.1%), with the low level of sport and physical activity adherence in our study being particularly striking. It is important for universities to reach agreements with gyms in their location and other sports facilities, to implement activities to promote sport as a preventive measure and to improve personal well-being (León et al., 2020).

The mean scores in the measures used showed, for **TMMS-24,** that our undergraduates are able to process emotional information because they have the ability to identify their own emotions and those of others and know how to express them (emotional attention), they can understand emotions (emotional clarity), and are able to manage emotions (emotional repair or regulation). This is consistent with other studies in Spanish university students (Merchán-Clavellino et al., 2019; Morales-Rodríguez et al., 2020), although in the study by Vega-Hernández et al. (2017), emotional repair had a higher mean score with respect to the other dimensions.

As regards emotion regulation, assessed using the **DERS,** our participants were largely found to have a medium level of emotion regulation across all the multidimensional aspects of the scale: awareness and understanding emotions, acceptance of emotions, engagement in goal directed behaviours when experiencing negative emotions, ability to use situation appropriate emotional regulation strategies flexibly to modulate emotional responses and emotional clarity. These results are similar to those in other studies with young population (Gómez-Simón et al., 2014; Hallion et al., 2018). Only the total score and the impulse subscale presented high scores, which would suggest difficulties in emotion regulation and controlling impulsive behaviours in university students (González Cabanach et al., 2017).

Our students' capacity for empathy, measured using the **IRI**, revealed high scores in perspective taking, fantasy, empathic concern and total score, which is consistent with previous studies (Guilera et al., 2018; 2019; Guilera & Batalla 2019; Quince et al., 2016; Wang et al., 2019; Serrada-Tejeda et al., 2022). Scores for personal distress were somewhat low, in line with the findings of Guilera et al (2018; 2019) in Spanish medical students, which might suggest that the participants experience little feeling of discomfort, anxiety and distress when they witness the negative experiences of others. Thus, the undergraduates in our sample have a high level of empathic capacity, being able to understand the psychological point of view of the other person (cognitive empathy), putting themselves in

the place of others and showing consideration for their feelings and concerns (affective empathy).

The results for coping capacity, measured on the **COPE** questionnaire, reveal the existence of a good coping style and adaptive strategies, with particularly high mean scores found on the subscales of confrontation, acceptance, emotional and social support and lower scores on behavioural disengagement, denial, religion and substance use. Similar findings have been reported by Agha (2021), Demiral Yilmaz et al (2020) and Sreelatha et al (2018), with a predominance of adaptive coping strategies in various university samples, suggesting that good coping strategies help reduce suffering, stress, emotional distress, etc.

With regard to the **relationships between variables**, our findings suggest the importance of **anxiety and stress** in the undergraduates, in line with other studies from different parts of the world and for students enrolled on different types of degree courses (Balaji et al., 2019; Belaunzaran, 2019; Cañero et al., 2019; Castañeda 2016; Mohamad et al., 2021; Morales-Rodríguez & Pérez-Mármol, 2019; Musumari et al., 2018; Morales-Rodríguez et al., 2020). Our data confirm that students reporting episodes of anxiety or stress exhibit greater attention to emotions and inability to repair such emotions (Guil et al., 2021), have difficulties in overall emotion regulation and on most of the subscales (Hallion et al., 2018), and present less effective coping strategies, as shown by their scores on some of the COPE subscales, such as: venting, self-blame and lower positive reframing (Masha'al et al., 2022). Empathy, however, was higher among students with anxiety or stress, such that, as suggested (Pittelkow et al., 2021), there exists hypersensitivity to the emotional signals of others, excessive empathic functioning, with over-attribution of others' mental states and a greater sense of alertness among students with anxiety.

Thus, our results show that anxiety has an impact on all the variables under analysis. These findings can be used to design appropriate and systematic interventions and programmes to help students at risk of anxiety. Robust support and increased psychological assessment and monitoring among students must be given serious attention to avoid higher prevalence rates of anxiety in the future (Guilera & Batalla, 2019; Mohamad et al., 2021; Sanchis-Soler et al., 2022).

As regards **sex,** we posited that the women would score worse on all the indicators used, compared to their male counterparts, and, indeed, they exhibited a greater focus on their emotions, inability to repair emotions and to distinguish their own emotional states from those of others, all of which is consistent with the findings of Acebes-Sánchez et al (2019). However, other works using the TMMS-24 (Cañero et al., 2019; Merchán-Clavellino et al., 2019) found no gender differences in the dimensions of emotional intelligence. Nonetheless, in our case, the women focus too much attention on their emotional state, distinguish badly between emotional states and manage them less effectively than their male counterparts. It might even be said that the male undergraduates show better emotional intelligence skills, and, thus, have a solid meta-knowledge of their own emotions, serving as a base on which to understand the emotions of others (Acebes-Sánchez et al., 2019; Lopez et al., 2021).

The female undergraduates, however, have a strong empathic capacity, measured on the IRI and its subscales. This is in line with the findings of other national, and international, works, which also report greater empathic disposition in women (Guilera & Batalla. 2019; Irfan et al., 2019; Mestre et al., 2004; Pérez-Albéniz et al., 2003; Quince et al., 2016; Serrada-Tejeda et al., 2022). Similarly, the girls in our study are distinguished for their solid, active and effective coping strategies, as assessed on the COPE tool, while their male counterparts exhibit a more avoidant style in response to stress, manifested by substance use and humour (Balaji et al., 2019).

Some of these statistically significant differences in the sex variable no disappeared when we excluded the students who reported anxiety or stress. Thus, the female undergraduates, compared with their male peers, continue to show an excellent empathic response, adequate coping capacity and weak emotional clarity.

The type of **degree course (Health Sciences and Social Sciences)** revealed few statistically significant differences, although when we excluded individuals with anxiety such differences did emerge. In the sample without students reporting anxiety, the Social Science students scored higher on difficulties in emotion regulation in impulse, non-acceptance, strategies and total score, as well as on the IRI subscale of personal distress. These students also use the maladaptive coping strategy of substance use in both the overall sample and the subsample of students without anxiety or stress.

In contrast, the Health Sciences undergraduates revealed more empathy on the IRI subscale of "empathic concern", although this statistically significant difference did not remain when the students with anxiety were excluded from the sample. Additionally, the Health Sciences students were found to use "confrontation" strategies in response to stressors in both the overall sample and the sample without the students reporting anxiety.

Hence, a highly particular and differentiating profile evidently appears to exist for each type of degree course, depending on the theoretical and practical syllabus and the academic demands of the course. On the one hand, it seems that students of Social Sciences (Social Work, Social Education and Business Administration and Management) have difficulties in emotion regulation and exhibit a coping style based on psychoactive substance use. On the other, students of Health Sciences (Nursing, Speech and Language Therapy and Occupational Therapy) present a more empathic profile and a confrontation-based coping style. However, other studies (Fernández-Rodríguez et al., 2019) have not identified this differentiating profile be-

tween degree courses.

Our findings provide information that may help design programmes to train students in skills for handling and regulating emotions (González Cabanach, et al., 2017; Martínez-Lorca et al., 2017), particularly for undergraduates studying for Social Sciences degrees. This would not only give such students the intrapsychic resources required to successfully cope with academic demands and stress but would also help them achieve the skills needed in their future careers. We hope that future research will continue to delve into this aspect.

The **year group** variable shows that older students in later year groups exhibit greater capacity to repair emotions and to discriminate between their own emotional states and those of others, both in the overall sample and the subsample. First-year students appear unable to understand their own emotions or discriminate them from those of others, which prevents them from dealing with life events in the most open and positive way. As suggested by a number of authors, the ability to understand and regulate emotions depends on age (Cañero et al., 2019; Livingstone & Isaacowitz, 2018).

Additionally, first-year students, compared with their more experienced counterparts, appear to have more difficulties in certain elements of emotion regulation, such as goals (difficulties engaging in goal-directed behaviours when distressed), clarity (lack of emotional clarity), strategies (limited access to effective emotional regulation strategies) and difficulties in emotional dysregulation in the overall score. Thus, student age is associated with the DERS score, although Guzmán-González et al. (2014) do not report this relationship. However, when we excluded the students with anxiety or stress from the sample, the only difficulty remaining, among freshers compared to their older counterparts, was that of emotional clarity. Thus, again we find the lack of emotional clarity among first-year students compared with students of later years.

Similar results were revealed for empathic capacity, as measured on the IRI. Students in later years showed a good capacity for perspective taking, while their first-year counterparts exhibit personal distress. This is consistent with the findings of Irfan et al. (2019), albeit with students of Dentistry. Additionally, these findings were maintained when the students with anxiety or stress were dropped from the sample. These results are important because we can see how the empathy not decline with the courses and empathy not depend of anxiety or stress.

As regards coping skills, while the fourth-year students are able to implement confrontation strategies, attempting to deal with the root cause of the problem (Balaji et al., 2019), the first-year students use a combination of activating and/or adaptive resources and avoidant and/or maladaptive resources, based on social and emotional support, denial and self-blame. After excluding the students with anxiety or stress from the sample, the denial strategy remained present in the first-year students. Students should be trained in better coping strategies, such as active coping (Balaji et al., 2019).

In light of the above, we can conclude that the first year at university is a factor of stress, and thus, the authorities at such institutions should monitor or intervene with such students in order to help them in the process of managing and coping with their emotions, thus promoting their psychological well-being and social functioning.

Finally, **doing sport and engaging in physical activity** provides a range of benefits, including physical fitness, mental health, psychological impacts, emotional intelligence, self-esteem, body image and the reduced risk of premature death and chronic diseases (Acebes-Sánchez et al., 2019; Adarve et al., 2019; Alvear-Galindo et al., 2014; Grasdalsmoen et al., 2020; López et al., 2021; Rivas-Espinosa et al., 2019; Sanchis-Soler et al., 2022; Tang et al., 2020). The World Health Organisation (WHO) established the importance of regular physical activity and published the Global Recommendations on physical activity for health in 2010. This action plan aims to provide a system-based framework of effective and practical policy actions in order to increase physical activity at all levels. Moreover, colleges and universities should, to a large extent, consider facilitating the practice of sports and exercise among their students, possibly integrating physical exercise into the university environment (González et al., 2017; Rivas-Espinosa et al., 2019; Sanchis-Soler et al., 2022).

In our case, the students that engage in more physical activity present better emotional intelligence and more appropriate coping styles, compared to the undergraduates that do less physical exercise. Other studies have reported similar findings (Acebes-Sánchez et al., 2019; Budnik-Przybylska et al., 2021; López et al., 2021) where high levels of physical activity are associated with better control of the emotions in the two dimensions, highlighting their ability to repair themselves, as well as their emotional clarity. Thus, it is important that university institutions promote engagement in physical activity and sports as a measure of self-care, and to provide health and psychological benefits and avoid a sedentary lifestyle. Nonetheless, with regard to empathy, our analysis reveals a curious finding. While, on the one hand, students that do not engage in physical activity score high on personal distress (Budnik-Przybylska et al., 20201), reflecting the association between physical exercise and stress, they also present the highest scores in overall empathy, being, thus, more empathic. This should be analysed in greater depth in future research.

Conclusion

We believe it especially important to measure, evaluate, quantify, and determine emotional, empathic and coping abilities among university students of both Health Sciences (Nursing, Speech and Language Therapy and Occupational Therapy) and Social Sciences (Social Work, Social Education and Business Administration and Man-

agement). Detecting these skills is the first step towards subsequently undertaking work and actions in prevention and training in emotional and psychosocial resources, in order to achieve the highest possible level of psycho-emotional well-being. Students would then be provided with personal self-knowledge tools and would learn how to manage them, helping them to deal with the reality in which they move in a more functional, meaningful and adaptive manner (Balaji et al., 2019; Dilber et al., 2016; Fernández-Rodríguez et al., 2019; Martínez-Lorca et al., 2017; Tang et al., 2018).

Limitations

One of these limitations is the cross-sectional nature of the study, which does not allow us to establish causal relationships. Future research should focus on analysing this relationship with longitudinal studies. Further, our sample consists only of Spanish students. It might therefore be interesting to extend the sample to other universities. In additions, although we consider the sample is sufficiently extensive, only the students that attended class on the day of data collection were included, and thus many students did not form part of the sample, which may have affected the representativeness of our sample. Finally, the majority of our participants were female, which hinders the generalisation of our results in light of a gender bias.

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