Depression, Anxiety and Stress in Learning and Working Ecosystems: Case Study of a Higher Education Institution

Tania Gaspar[1,*], Susana Pestana[2], Sofia Sousa[1], Marta Barata[1] and Nuno Loureiro[2]

[1]Lusofona University/Hei-Lab; CHRC/UNL/ Aventura Social Association

[2]Polytechnic Institute of Beja

ABSTRACT

Educational institutions contribute to the well-being, health and performance of students and professional. The aim of this study to understand and characterise how the dimensions of a higher education institution affect the Depression Anxiety and Stress of students and professionals. We compared the differences and similarities between the perceptions of students and professionals. The study used the Ecosystems of Healthy Learning and working Environments (EATS and EA2S) instruments and involved A total of 688 participants took part in the study, including 521 students and 167 professionals from an Higher Education Institution. Regarding the students, 69,4% were female (*n*=359) and 30,6% were male (*n*=158). As for the professionals, 63,3% were female (*n*=105) and 36,7% were male (*n*=61). The EATS and EA2S instruments consist of a total of 62 items organized into 9 dimensions.

Comparing students' perceptions with those of professional, we see that students have a more positive perception of the dimensions of the learning and working ecosystem in relation to Ethics and Values, Leadership Commitment, Students/Professionals Involvement and Community Involvement. With the exception of Psychosocial Risks of Work – Mental Health

dimension, in which students perceive more risks in terms of mental health when compared to professionals. A regression model was carried out in order to understand the factors that best explain depression, anxiety and stress in students and professionals. We found that students and professionals have in common that gender, age and psychosocial risks related to mental health help explain symptoms (depression, anxiety and stress). In the case of students, the influence of the psychosocial environment, the physical environment and stress management skills were also significant. The study refers to a multidomain intervention with the aim of promoting psychological health, well-being and skills, academic engagement and preventing higher education students and professional from depression, anxiety and stress and negative impact on academic and professional performance, through the development of psychological intervention, prevention and health promotion activities and training based on scientific evidence.

Keywords: ecosystems; higher education; wellness; students; professionals

INTRODUCTION

The quality of the work environment is strongly associated with the well-being of workers (Murtin et al., 2022), with the existence of healthy work environments being identified as an essential factor for global development and progress (Kirsten, 2024). Health, along with the presence of adequate knowledge and skills, and work motivation, is one of the factors that influences the performance of professionals and, consequently, their productivity (Mansyur, 2021). In recent years, there has been an increasing recognition of concerns about mental health in the context of higher education institutions, with growing reports of stress, burnout, anxiety, and depression among professionals that work in this environment (Halat et al., 2023). The COVID-19 pandemic has heightened the quantity and complexity of challenges associated with the health of professionals, making the importance of workplaces as promoters of their health and well-being more evident. In this context, it is

noted that there is a growing number of organizations increasingly investing in policies and programs targeted at professionals (Kirsten, 2024).

Employees working in higher education institutions are subject to various psychosocial risk factors and operate under significant levels of stress, which can consequently lead to a higher prevalence of mental health problems (Mátó et al., 2021). The demanding work environment, the need to balance personal and professional responsibilities, the constant pressure for productivity, and the simultaneous undertaking of multiple tasks such as teaching, guidance, research, and development can have an impact on the well-being and mental health of this professionals (Halat et al., 2023). This makes them more vulnerable to the development of mental and somatic problems and the burnout syndrome (Carlotto & Câmara, 2017; Mátó et al., 2021). In a study conducted by Mátó et al. (2021), the primary stressors identified in professionals working in higher education institutions included tight deadlines, frequent overwork, difficulty meeting demands, and communication issues with colleagues and superiors. Meanwhile, in another study conducted by Carlotto and Câmara (2017), the authors found that burnout in faculty is associated with a lack of autonomy in work, absence of social support from supervisors and colleagues, role conflict caused by overload when individuals cannot complete their activities within the established time frame and with the available resources, and interpersonal conflicts with supervisors, colleagues, or students. In another study, Saeed et al. (2023) observed that depression and anxiety of high education teachers during third wave of COVID-19 were significantly associated with lower cadre, and poor health status.

The environment in higher education institutions should create a place where professionals can develop, learn, teach, and thrive without the compromising of their well-being. In this context, it is emphasized that transforming higher education institutions into healthy environments requires a fundamental shift in the work culture (Halat et al., 2013). Thus, there is a need to develop health-centered policies that consider the reflections and opinions of professionals and the existence of risk factors to promote the effectiveness and efficiency of their work, preserve their health, prevent the onset of diseases (Mátó et al., 2021), enhance their well-being and quality of life, and create healthy work environments (Montgomery & Lainidi, 2023).To achieve this, it is crucial to train leaders so that they can be able to recognize the needs of the professionals and seek to meet them (Evans, 2016; Montgomery & Lainidi, 2023), adopting actions that promote their sense of competence and help them feel appreciated by others while establishing boundaries that safeguard their well-being (Montgomery & Lainidi, 2023).

Similarly, the mental health of students is also a growing concern among higher education institutions (Bhatia et al., 2020), as there is an increase in the prevalence of mental health problems and low levels of psychological well-being in this population, which can consequently impact their performance and achievement of perceived goals (Darré, 2021). Thus, it is evident that issues related to depression, anxiety, and stress have become increasingly prevalent among high education students (Mofatteh, 2021; Puerta et al., 2022), particularly when compared to the pre-pandemic phase (Puerta et al., 2022). In a systematic review conducted by Sheldon et al. (2021), the authors found out that 25% of high education students experienced depressive symptoms, and 14% reported results associated with suicidal ideation. A high prevalence of anxiety and stress disorders was also observed among high education students (Böke et al., 2019; Ruiz-Hernández et al., 2022; Tan et al., 2023).

The high prevalence of mental health problems in high education students is related to the changes experienced not only during the transition to this academic level but also throughout the academic journey (Ebert et al., 2019; Mofatteh, 2021). Scientific evidence has indicated several risk factors contributing to mental health problems in high education students, including being female, changing residence, financial stress, lack of social support, social isolation (including loneliness and social disconnection), difficulties with peers, intense workload, pressure with exams and assignments, fear of obtaining negative results, lack of engagement, difficulty balancing academic and professional life, and experiences of sexual harassment in the university context (Campbell et al., 2022; Ebert et al., 2019; Mofatteh, 2021; Sheldon, 2021).

In summary, it is observed that the characterization of the mental health of high education students and the understanding of the factors that positively and negatively influence their well-being and mental health can provide a foundation for designing specific strategies and interventions to prevent mental health problems and ensure targeted support for students that are at higher risk (Campbell et al., 2022; Maria et al., 2022). Considering that various risk factors for student mental health are related to the academic environment (Mofatteh, 2021),

higher education institutions play a crucial role in promoting their mental health and well-being. Thus, higher education institutions should act in the process of social integration of students and throughout their academic journey, striving to provide positive experiences necessary for student development with the aim of enhancing the academic success of the university population (Porto & Soares, 2017).

MATERIALS AND METHODS

Participants

A total of 688 participants took part in the study, including 521 students and 167 professionals from an Higher Education Institution**.** Regarding the students, 69,4% were female (*n*=359) and 30,6% were male (*n*=158). As for the professionals, 63,3% were female (*n*=105) and 36,7% were male (*n*=61).

Instruments

With students was used the Ecosystems of Healthy Learning Environments (EA2S) instrument (Gaspar et al, 2023) and with professional was used the Ecosystems of Healthy working Environments (EATS) instrument (Gaspar et al, 2022), are both proxy instruments that consists of a total of 62 items organised into 9 dimensions based on the Healthy Learn and Work environment resp respectively based on model proposed by the World Health Organization[24]. The Ethics and Ecosystems Values dimension has 8 items, Commitment to Leadership has 6 items, Student Involvement has 7 items, Psychosocial Risks related to content and relationships with leadership has 12 items, Psychosocial Risks related to Well-being and Mental Health has 5 items, Physical Environment has 5 items, Distance Learning has 3 items, Community Involvement has 12 items and Resources for Personal Health has 4 items. All questions have a 5-point Likert response scale. The instrument revealed adequate internal consistency for all dimensions (range between α =.84 and α =.93).

With professional was used the Healthy Workplace Ecosystems instrument (EATS) (Gaspar et al, 2022) that comprises also a total of 62 items organized into 9 dimensions based on the Healthy Workplaces model proposed by the World Health Organization [23]. The Ethics and Values dimension has 8 items (α = .91), the Commitment to Leadership has 6 items (α = .95), the Worker'' Involvement has 7 items (α = .89), the Psychosocial Risks at Work related to work content and relationships with leadership has 12 items (α = .91), the Psychosocial Risks at Work related to Well-being and Mental Health has 5 items (α = .86), the Physical environment has 5 items (α = .92), teleworking has 3 items (α = .82), the Community Involvement has 12 items (α = .90) and Resources for Personal Health has 4 items (α = .83). All questions have a 5-point Likert-type scale [42]. The Cronbach's alpha levels obtained for each factor show that they have adequate internal consistency (between .82 and .95). A health behaviours assessment scale was used with 4 items [42] related to eating behaviours, stress levels, sleep habits and physical activity, which has adequate internal consistency (α = .70). The 4-item version of the Stress Perception Scale (EPS) was used to assess the degree to which an individual evaluates their life situations as stressful [43, 44] which in the present study revealed adequate internal consistency (α =.77).

The DASS (Depression, Anxiety and Stress Scale)[25,26] consists of 21 items and is organized into three dimensions: stress, depression and anxiety, each with 7 items respectively. The higher the score, the higher the level of stress, depression and anxiety. The Total score of the scale was used for this study. All questions have a 4-point Likert-type scale where 1 represents Not applied to me at all and 4 represents Applied to me most of the time. The instrument revealed adequate internal consistency for all dimensions (range between α =.81 and α =.88).

The 4-item version of the Stress Perception Scale (EPS) was used to assess the degree to which an individual evaluates their life situations as stressful and their stress management skills[27,28] which in the present study revealed adequate internal consistency (α =.77). All questions have a 5-point Likert-type scale where 1 represents strongly disagree and 5 represents strongly agree. A higher score obtained in the scale reveals a less positive perception of stress management.

Procedure

The instrument was submitted to and approved by the Ethics Committee of the Prof Fernando Fonseca Hospital,

reference EPE 031/2021. The sample was obtained by convenience. Higher education institutions that agreed to participate received the instrument via a link and disseminated the link internally to academic community. The link gave access to an explanation of the study, contact details for the researchers to clarify any doubts, information on confidentiality, anonymity and the voluntary nature of participation. The participant only had access to the instrument after signing the informed consent form.

RESULTS

A total of 688 participants took part in the study, including 521 students and 167 professionals (teaching and non-teaching staff). Regarding the students, 69,4% were female (n=359) and 30,6% were male (n=158). As for the professionals, 63,3% were female (n=105) and 36,7% were male (n=61).

With regard to the differences between students and professionals in the scales of the EATS and EA2S instruments, according to Table 1, the scores obtained in the Ethics and Values subscale by students (M=3,65; SD=0,66; n=521) were higher than those of professionals (M=3,39; SD=0,79; n=167), and this difference was statistically significant (t(242,96)=3,876; p=<0,001; d=0,38). The scores obtained in the Leadership Commitment subscale by students (M=3,48; SD=0,76; n=521) were also higher than those of professionals (M=3,14; SD=0,99; n=167), and this difference was statistically significant (t(232,15)=4,054; p=<0,001; d=0,41). In turn, the scores obtained in the Students/Professionals Involvement subscale by students (M=3,64; SD=0,64; n=521) were lower than those of professionals (M=3,80; SD=0,68; n=167), and this difference was statistically significant (t(686)=-2,830; p=0,005; d=-0,25). The total scores obtained in the Psychosocial Risks of Work – Mental Health subscale by students (M=3,37; SD=0,91; n=521) were higher than those of professionals (M=3,17; SD=0,93; n=167), and this difference was statistically significant (t(686)=2,569; p=0,010; d=0,23). Finally, it is noteworthy that the total scores obtained in the Community Involvement subscale by students (M=3,52; SD=0,65; n=521) were lower than those of professionals (M=3,66; SD=0,63; n=167), and this difference was statistically significant (t(686)=-2,558; p=0,011; d=-0,23). No statistically significant differences were found between groups regarding the Psychosocial Environment, Physical Environment, Health Resources, and Teleworking scales.

Table 1. Comparison between students and professionals in relation to the subscales of the EATS and EA2S instruments

	Students			Professionals			t/sig
	n	M	SD	N	M	SD	
Ethics and Values	521	3,65	0,66	167	3,39	0,79	3,876[***]
Leadership Commitment	521	3,48	0,76	167	3,14	0,99	4,054[***]
Students/Professionals Involvement	521	3,64	0,64	167	3,80	0,68	-2,830[**]
Psychosocial Environment	521	3,79	0,54	167	3,76	0,63	0,446
Psychosocial Risks of Work – Mental Health	521	3,37	0,91	167	3,17	0,93	2,569[**]
Physical Environment	521	3,47	0,79	167	3,58	0,87	-1,506
Community Involvement	521	3,52	0,65	167	3,66	0,63	-2,558[*]
Health Resources	521	2,86	0,91	167	2,80	0,85	0,818
Teleworking	414	3,35	0,85	124	3,49	0,96	-1,442

[*] p<0,05; [**] p<0,01; [***] p<0,001

With regard to the differences between students and professionals in the Depression Anxiety and Stress Scale (DASS), according to Table 2, the scores obtained in the Depression subscale by students (M=12,05; SD=4,80; n=521) were higher than those of professionals (M=9,87; SD=3,70; n=167), and this difference was statistically significant (t(360,11)=6,127; p=<0,001; d=0,48). The scores obtained in the Anxiety subscale by students (M=11,38; SD=4,64; n=521) were higher than those of professionals (M=9,05; SD=3,28; n=167), and this difference was statistically significant (t(396,09)=7,181; p=<0,001; d=0,54). Also, the scores obtained in the Stress subscale by students (M=13,37; SD=4,99; n=521) were higher than those of professionals (M=11,38; SD=4,04; n=167), and this difference was statistically significant (t(341,94)=5,239; p=<0,001; d=0,42). Finally, the total scores obtained in the DASS scale by students (M=36,81; SD=13,41; n=521) were higher than those of professionals (M=30,30; SD=10,04; n=167), and this difference was statistically significant (t(371,43)=6,683; p=<0,001; d=0,51).

With respect to the differences between students and professionals regarding the Burnout and Stress management difficulties subscales, according to Table 3, the scores obtained in the Burnout scale by students (M=10,25; SD=3,18; n=521) were higher than those of professionals (M=9,07; SD=3,25; n=167), and this difference was statistically significant (t(686)=4,156; p=<0,001, d=0,37). The scores obtained in the Stress management difficulties scale by students (M=11,48; SD=2,74; n=521) were also higher than those of professionals (M=9,71; SD=2,93; n=167), and this difference was statistically significant (t (265,46) =6,896; p=<0,001; d=0,64).

Table 2. Comparison between students and professionals in relation to the Depression Anxiety and Stress Scale, Burnout and Stress

	Students (n=521)		Professionals (n=167)		t/sig
	M	SD	M	SD	
DASS – Total	36,81	13,41	30,30	10,04	6,683[***]
DASS – Depression	12,05	4,80	9,87	3,70	6,127[***]
DASS – Anxiety	11,38	4,64	9,05	3,28	7,181[***]
DASS – Stress	13,37	4,99	11,38	4,04	5,239[***]
Burnout	10,25	3,18	9,07	3,25	4,156[***]
Stress management difficulties	11,48	2,74	9,71	2,93	6,896[***]

[***] p<0,001

[***] p<0,001

With regard to the correlations between the subscales among students (Table 3), it stands out the very strong positive correlations between the total DASS subscale and the Stress subscale (r=0,943), the Depression subscale (r=0,919) and the Anxiety subscale (r=0,925), and between the Burnout subscale and Psychosocial Risks of Work – Mental Health (r=0,933), the strong positive correlations between the Anxiety subscale of the DASS instrument and the Stress subscale (r=0,823) and the Depression subscale (r=0,762), between the Stress subscale and the Depression subscale (r=0,798) and between Leadership Commitment and Ethics and Values (r=0,806), and the moderate positive correlations between Psychosocial Environment and Ethics and Values (r=0,607), Leadership Commitment (r=0,551) and Students Involvement (r=0,694), between Community Involvement and Ethics and Values (r=0,598), Leadership Commitment (r=0,596), Students Involvement (r=0,535), Psychosocial Environment (r=0,619) and Physical Environment (r=0,572), and between Stress and the Stress subscale of the DASS instrument (r=0,591), the Depression subscale (r=0,604), the Anxiety subscale (r=0,533) and the total scale of DASS (r=0,621).

Table 3. Correlations between subscales regarding students

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1- DASS - Stress	1	0,798**	0,823**	0,943**	-0,164**	-0,135**	-0,218**	-0,220**	0,401**	-0,152**	0,211**	-0,119**	0,435**	0,591**	-0,169**
2- DASS - Depression		1	0,762**	0,919**	-0,178**	-0,136**	-0,313**	-0,266**	0,359**	-0,117**	0,178**	-0,076	0,407**	0,604**	-0,115*
3- DASS - Anxiety			1	0,925**	-0,170**	-0,103*	-0,241**	-0,265**	0,327**	-0,110*	0,213**	-0,042	0,349**	0,533**	-0,130**
4- DASS - Total				1	-0,183**	-0,135**	-0,277**	-0,269**	0,391**	-0,137**	0,216**	-0,086*	0,428**	0,621**	-0,149**
5- Ethics and Values					1	0,806**	0,487**	0,607**	-0,091	0,466**	0,598**	0,329**	-0,121**	-0,158**	0,232**
6- Leadership Commitment						1	0,445**	0,551**	-0,067	0,471**	0,596**	0,374**	-0,094*	-0,144**	0,232**
7- Students Involvement							1	0,694**	0,022	0,407**	0,535**	0,285**	-0,018	-0,282**	0,240**
8- Psychosocial Environment								1	-0,081	0,471**	0,619**	0,282**	-0,111*	-0,225**	0,270**
9- Psychosocial Risks of Work – Mental Health									1	-0,122**	-0,123**	-0,097*	0,933**	0,404**	-0,071
10- Physical Environment										1	0,572**	0,372**	-0,135**	-0,158**	0,327**
11- Community Involvement											1	0,488**	-0,129**	-0,201**	0,348**
12- Health Resources												1	-0,120**	-0,040	0,311**
13- Burnout													1	0,440**	-0,103*

15- Stress													1	-0,122*
16- Teleworking														1

With respect to the correlations between the subscales among professionals (Table 4), very strong positive correlations are noteworthy between the total DASS instrument subscale and the Stress subscale (r=0,927) and the Depression subscale (r=0,913). It also stands out the strong positive correlations between the Anxiety subscale of the DASS instrument and the Stress subscale (r=0,740), the Depression subscale (r=0,720) and the total scale of DASS (r=0,889), between the Stress subscale and the Depression subscale (r=0,770) and between Leadership Commitment and Ethics and Values (r=0,842), and the moderate positive correlations between Psychosocial Environment and Ethics and Values (r=0,619), Leadership Commitment (r=0,653) and Professionals Involvement (r=0,681), between the Physical Environment and Ethics and Values (r=0,507) and Psychosocial Environment (r=0,511), between Community Involvement and Ethics and Values (r=0,619), Leadership Commitment (r=0,667), Professionals Involvement (r=0,539) and Psychosocial Environment (r=0,667), between Health Resources and Community Involvement (r=0,545), and between Stress and the Stress subscale of the DASS instrument (r=0,559), the Depression subscale (r=0,568), the total subscale of DASS (r=0,567), Psychosocial Risks of Work – Mental Health (r=0,547) and Burnout (r=0,576).

Table 4. Correlations between subscales regarding professionals

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1- DASS Stress	1	0,770**	0,740**	0,927**	-0,078	-0,128	-0,101	-0,201**	0,474**	-0,158*	-0,141	-0,175*	0,498**	0,559**	-0,087
2- DASS Depression		1	0,720**	0,913**	-0,095	-0,124	-0,242**	-0,264**	0,379**	-0,132	0,260**	-0,158*	0,463**	0,568**	-0,057
3- DASS Anxiety			1	0,889**	0,078	0,033	-0,018	-0,152	0,325**	-0,046	-0,069	-0,071	0,341**	0,408**	0,001
4- DASS Total				1	-0,041	-0,086	-0,136	-0,228**	0,436**	-0,128	-0,175*	-0,152*	0,482**	0,567**	-0,055
5- Ethics and Values					1	0,842**	0,468**	0,619**	-0,214**	0,507**	0,619**	0,395**	0,270**	-0,164*	0,113
6- Leadership Commitment						1	0,436**	0,653**	-0,248**	0,446**	0,667**	0,479**	0,297**	-0,163*	0,108
7- Professionals Involvement							1	0,681**	-0,101	0,409**	0,539**	0,368**	-0,175*	0,321**	0,117
8- Psychosocial								1	-0,288**	0,511**	0,667**	0,493**	0,341**	0,351**	0,205

	9	10	11	12	13	15	16
Environment							
9- Psychosocial Risks of Work – Mental Health	1	-0,276***	-0,204**	-0,179*	0,933***	0,547***	-0,022
10- Physical Environment		1	0,450***	0,393***	-0,322***	-0,276***	0,218
11- Community Involvement			1	0,545***	-0,256***	-0,277***	0,198
12- Health Resources				1	-0,179*	-0,234**	0,095
13- Burnout					1	0,576***	-0,079
15- Stress						1	-0,119
16- Teleworking							1

An analysis of factors associated with the Depression Anxiety and Stress Scale (DASS) among students (Table 5) revealed that the results obtained on this scale are explained by various factors, namely the Psychosocial Environment, Psychosocial Risks of Work – Mental Health, Physical Environment, and Stress. Gender, age, and the remaining subscales of the EATS instrument do not contribute significantly to the explanation of the results obtained in the DASS Scale by students. The model proved to be significant ($F_{(12, 365)}= 22,991$; $p= <0,001$; $R^2a= 0,41$), explaining 41% of the variation in the dependent variable.

Table 5. Regression model regarding students

Predictors	B	SD	β	T	R^2 aj	F	p
Sex	-1,24	1,25	-0,04	-0,99			
Age	-0,91	1,24	-0,03	-0,74			
Ethics and Values	-1,25	1,44	-0,06	-0,86			
Leadership Commitment	1,75	1,20	0,10	1,46			
Students Involvement	-0,87	1,29	-0,04	-0,68			
Psychosocial Environment	-3,78	1,60	-0,15	2,36*			
Psychosocial Risks of Work – Mental Health	2,69	0,71	0,17	3,80***			

Physical Environment	2,02	0,86	0,12	2,35*			
Community Involvement	-0,38	1,27	-0,02	-0,30			
Health Resources	-0,17	0,71	-0,01	-0,24			
Stress management difficulties	2,57	0,24	0,50	10,74***			
Teleworking	-1,02	0,70	-0,06	-1,45			
Model					0,41	22,991	<0,001

* p<0,05; *** p<0,001

The analysis of factors associated with Depression, Anxiety, and Stress Scale (DASS) among professionals (Table 6) revealed that the results obtained on this scale are explained by Psychosocial Risks of Work – Mental Health and Stress. Gender, age, and the remaining subscales of the EATS instrument do not contribute significantly to the explanation of the results obtained in the DASS Scale by professionals. The model proved to be significant (F (12, 110) = 5,778; *p*= <0,001; R^{2}a= 0,32), explaining 32% of the variation in the dependent variable.

Table 6. Regression model regarding professionals

Predictors	B	*SD*	β	T	R^2 aj	F	*p*
Sex	-0,18	1,78	-0,01	-0,10			
Age	-1,99	2,15	-0,08	-0,93			
Ethics and Values	2,25	2,04	0,16	1,10			
Leadership Commitment	-0,55	1,75	-0,05	-0,32			
Professionals Involvement	0,70	1,58	0,05	0,44			
Psychosocial Environment	-2,78	2,12	-0,17	-1,31			
Psychosocial Risks of Work – Mental Health	3,14	1,12	0,26	2,80**			
Physical Environment	0,84	1,16	0,07	0,73			
Community Involvement	-1,25	2,08	-0,07	-0,60			
Health Resources	0,58	1,15	0,05	0,50			
Stress management difficulties	1,40	0,38	0,38	3,74***			
Teleworking	0,10	0,87	0,01	0,12			
Model					0,32	5,778	<0,001

** p<0,01; *** p<0,001

DISCUSSION

This study aims to deepen knowledge about mental health and the perception of healthy learning and working

environments, and to compare the perceptions of high education students and professional.

With regard to the differences between students and professionals in the scales of the EATS instrument, the scores obtained in the Ethics and Values subscale by students were higher than those of professionals. The scores obtained in the Leadership Commitment subscale by students were also higher than those of professionals. In turn, the scores obtained in the Students/Professionals Involvement subscale by students were lower than those of professionals. The total scores obtained in the Psychosocial Risks of Work – Mental Health subscale by students were higher than those of professionals. Finally, it is noteworthy that the total scores obtained in the Community Involvement subscale by students were lower than those of professionals.

With respect to the differences between students and professionals regarding the Burnout, Engagement, and Stress management difficulties subscales, the scores obtained in the Burnout scale by students were higher than those of professionals. The scores obtained in the Stress management difficulties scale by students were also higher than those of professionals. No statistically significant differences were found between groups regarding the Engagement subscale.

The factor that better explain Depression Anxiety and Stress Scale (DASS) among students are related to Psychosocial Environment, Psychosocial Risks of Work – Mental Health, Physical Environment and Stress management difficulties, gender and age. Female, younger students, students with more psychosocial risks related to mental health, worst physical environmental and less stress management skills are in higher risk in relation to depression, stress and anxiety symptoms.

The factor that better explain Depression Anxiety and Stress Scale (DASS) among professional are related to Psychosocial Risks of Work – Mental Health, Physical Environment and Stress management difficulties, gender and age. Female, younger professional, professionals with more psychosocial risks related to mental health and less stress management skills are in higher risk in relation to depression, stress and anxiety symptoms.

Teachers' and students' symptoms of depression, stress and anxiety are influenced by psychological factors such as Psychosocial Risks of Work - Mental Health, Physical Environment and Stress management difficulties, sociodemographic factors such as age and gender. Psychosocial and physical environment factors influence students' mental health more than teachers'.

Higher education institutions appear to be relevant contexts for promoting mental health and socio-emotional and stress management skills for both teachers and students. It should be emphasised that improving the psychosocial and physical environment is also necessary for students' mental health. In many situations, the educational institution is the privileged place where students spend a lot of time and where they can find favourable conditions for their academic and personal development. Displaced students, socio-economically disadvantaged students and students with more risky family situations can find favourable environments in educational institutions that promote their biopsychosocial and environmental health and create more opportunities for academic and professional development.

The general aim of mental health services in higher education institutions should be to promote psychological health, well-being, academic engagement and the prevention of students dropping out of school and teachers and researchers turning over. We understand psychological health in the light of the Ecological Model, including and articulating individual, interpersonal, organisational and environmental factors. Given the complexity of the phenomenon, mental health services are based on the need to develop and integrate different levels and measures of prevention and intervention: universal measures for all students, professionals and other HEI stakeholders; selective measures for groups most at risk in terms of psychological health, wellbeing and academic failure; and specific measures for students with high levels of difficulty, which have an impact on their social and occupational functionality.

The mental health services of higher education institutions should have the specific objectives of (a) assessing the psychological health literacy, well-being and academic engagement of students and professionals; (b) developing and assessing psychological health promotion measures (self-awareness, self-regulation, prevention and reduction of anxiety and depressive symptoms, adaptation, flexibility, motivation and expectations); (c)

Developing and evaluating measures to promote well-being (active and healthy lifestyle, sleep habits, positive interpersonal relationships, assertiveness and other social skills, cultural habits and social participation); (d) Developing and evaluating measures to promote academic/professional engagement and dropout/turnover prevention (time management, setting priorities, managing expectations, study and learning methods, mentoring, involvement and participation in the academic community).

Mental health services in higher education institutions can also pursue the SDGs, with a multidisciplinary and complementary team, from an ecological perspective, with universal, selective and specific intervention measures, focusing on the following SDGs specifically:

Goal 3: Health and well-being, which aims to ensure good health and well-being for all. Promote mental health and well-being. The project's tasks and actions contribute to psychological health literacy and well-being, in terms of psychoeducation, emotional literacy, self-awareness, self-regulation and other socio-emotional competences, which make it possible to prevent and promote students' biopsychosocial and environmental health. The tasks and actions carried out also contribute to the literacy and awareness of a wider and more diverse population: the general population, the academic community and the scientific community.

Goal 4: Quality education, which aims to ensure inclusive and quality education for all. Promote lifelong learning. Eliminate gender disparities in education. Ensure equal access to all levels of education for vulnerable people, including people with disabilities and people in vulnerable situations. The tasks and actions promote competences in students and teachers for a more motivating teaching and learning process adapted to current realities and challenges. The study makes it possible to identify groups most at risk of school failure, possibly associated with socio-economic issues, isolation/displaced students, different generations, specific educational needs, among others. And consequently implement and propose specific measures to mitigate difficulties and maximise opportunities.

Goal 5: Gender equality, advocates tackling all forms of gender equality issues. End all forms of discrimination against all women and girls everywhere. Eliminate all forms of violence against all women and girls in the public and private spheres. Ensure women's full and effective participation and equal leadership opportunities. The diagnosis will make it possible to identify differences and possible disadvantages for women.

Possible inequalities related to mental health, unequal opportunities, violence and harassment will be integrated and reflected in the actions developed.

Goal 8: Decent work and economic growth, which is about ensuring inclusive and sustainable economic development worldwide. Achieve higher levels of economic productivity through diversification, technological modernisation and innovation. Achieving full and productive employment and decent work for all, including young people and people with disabilities. Achieving equal pay for work of equal value. The high education can be a privileged ecosystem for preparing students for the labour market, along with quality academic training, promoting the development of soft skills, psychological literacy, the development of critical thinking, creativity and active participation, which involve fundamental knowledge and skills for students to pursue their goals in the world of work and develop their potential, contributing to their autonomy and fulfilment and contributing to the society they are part of.

The priority of intervention in mental health promotion at the various levels of prevention and intervention, through universal, selective and targeted measures. At the universal level, measures and actions should be developed for the entire educational community, while selective measures should be aimed at specific groups at greater risk, such as female students and professionals, younger professionals and students, displaced students and teachers, first-year students, among other groups identified by continuous evaluation. Finally, access to psychological counselling for students and professionals with more depressive and anxiety symptoms and greater difficulties in managing stress, challenges and adaptation.

Students' positive development and learning are closely related to their mental health and subjective well-being. The high education ecosystem, as a context that promotes development, can act as a risk context for psychopathology, but it can also be a privileged promoter of psychological health, well-being, academic and

professional success.

REFERENCES

1. Bhatia, D., Roerig, M., Marani, H., King, M., Morales-Vazquez, M., & Allin, S. (2020). Supporting Mental Health and Wellbeing Among Students in Higher Education. North American Observatory on Health Systems and Policies.
2. Böke, B. N., Mills, D. J., Mettler, J., & Heath, N. L. (2019). Stress and Coping Patterns of University Students. Journal of College Student Development, 60(1), 85-103. https://doi.org/10.1353/csd.2019.0005
3. Campbell, F., Blank, L., Cantrell, A., Baxter, S., Blackmore, C., Dixon, J., & Goyder, E. (2022). Factors that infuence mental health of university and college students in the UK: a systematic review. BMC Public Health, 22, 1778. https://doi.org/10.1186/s12889-022-13943-x
4. Carlotto, M. S., & Câmara, S. (2017). Psychosocial Risks Associated with Burnout Syndrome Among University Professors. Avances en Psicología Latinoamericana, 35(3),447-457. https://doi.org/10.12804/10.12804/revistas.urosario.edu.co/apl/a.4036
5. Darré, M. V. V. (2023). Trastornos mentales y bajos niveles de bienestar psicológico en estudiantes universitários. Rev. cient. cienc. Salud, 5, e5113. https://doi.org/10.53732/rccsalud/2023.e5113
6. Ebert, D. D., Mortier, P., Kaehlke, F., Bruffaerts, R., Baumeister, H., Auerbach, R. P., Alonso, J., Vilagut, G., Martínez, K. U., Lochner, C., Cuijpers, P., Kuechler, A. M., Green, J., Hasking, P., Lapsley, C., Sampson, N. A., & Kessler, R. C. (2019). Barriers of mental health treatment utilization among first-year college students: First cross-national results from the WHO World Mental Health International College Student Initiative. International Journal of Methods in Psychiatric Research, 28, e1782. https://doi.org/10.1002/mpr.1782
7. Evans, L. (2016). University professors as academic leaders. Educational Management Administration & Leadership, 45(1), 123–140. https://doi.org/10.1177/1741143215578449
8. Halat, D. H., Soltani, A., Dalli, R., Alsarraj, L., & Malki, A. (2023). Understanding and Fostering Mental Health and Well-Being among University Faculty: A Narrative Review. J Clin Med, 12(13), 4425. https://doi.org/10.3390/jcm12134425
9. Kirsten W. (2024). The evolution from occupational health to healthy workplaces. American Journal of Lifestyle Medicine, 18(1), 64-74. https://doi.org/10.1177/15598276221113509
10. Mansyur, M. (2021). Occupational health, productivity and evidence-based workplace health intervention. Acta Med Philipp, 55(6). https://doi.org/10.47895/amp.v55i6.4273
11. Maria, O. C. C., Galvão, A. M., & Liébana, M. J. (2022). Evidence of Mental Health in University Students: A Contribution to Literacy. European Journal of Education and Pedagogy, 3(3), 300-305. http://dx.doi.org/10.24018/ejedu.2022.3.3.349
12. Mátó, V., Tarkó, K., Lippai, L., Nagymajtényi, L., & Paulik, E. (2021). Psychosocial Work Environment Risk Factors Among University Employees – A Cross-sectional Study in Hungary. Zdr Varst, 60(1), 10-16. https://doi.org/10.2478/sjph-2021-0003
13. Mofatteh, M. (2021). Risk factors associated with stress, anxiety, and depression among university undergraduate students. AIMS Public Health, 8(1), 36. https://doi.org/10.3934/publichealth.2021004
14. Montgomery, A., & Lainidi, O. (2023). Creating healthy workplaces in healthcare: Are we delaying progress by focusing on what we can do rather than what we should do? Front Public Health, 11(1105009). https://doi.org/10.3389/fpubh.2023.1105009
15. Murtin, F., Arnaud, B., Thi, C., & Parent-Thirion, A. (2022). The relationship between quality of the working environment, workers' health and wellbeing: Evidence from 28 OECD countries. Organization for Economic Co-operation and Development.
16. Porto, A. M. S., & Soares, A. B. (2017). Diferenças entre expectativas e adaptação acadêmica de universitários de diversas áreas do conhecimento. Análise Psicológica, 1(XXXIV), 13-24. https://doi.org/10.14417/ap.1170
17. Puerta, J. G., Malagón, M. C. G., Gijón, M. K., & Simón, E. J. L. (2022). Levels of Stress, Anxiety, and Depression in University Students from Spain and Costa Rica during Periods of Confinement and Virtual Learning. Educ. Sci., 12, 660. https://doi.org/10.3390/educsci12100660
18. Ruiz-Hernández, J. A., Guillén, Á., Pina, D., & Puente-López, E. (2022). Mental Health and Healthy Habits in University Students: A Comparative Associative Study. Eur. J. Investig. Health Psychol. Educ,

12, 114–126. https://doi.org/10.3390/ejihpe12020010

19. Saeed, A., Qureshi, A. F., Rasool, M. F., Islam, M., Hashmi, F. K., Saeed, A., Asad, R., Arshad, A., & Qureshi, A. A. (2023). Determinants of anxiety and depression among university teachers during third wave of COVID-19. BMC Psychiatry, 23(233). https://doi.org/10.1186/s12888-023-04733-9

20. Sheldon, E., Simmonds-Buckley, M., Bone, C., Mascarenhas, T., Chan, N., Wincott, M., Gleeson, H., Sow, K., Hind, D., & Barkham, M. (2021). Prevalence and risk factors for mental health problems in university undergraduate students: A systematic review with meta-analysis. Journal of Affective Disorders, 287, 282-292. https://doi.org/10.1016/j.jad.2021.03.054

21. Tan, G. X. D., Soh, X. C. Hartanto, A., Goh, A. Y. H., & Majeed, N. M. (2023). Prevalence of anxiety in college and university students: An umbrella review. Journal of Affective Disorders Reports, 14, 100658. https://doi.org/10.1016/j.jadr.2023.100658