

**MENTAL HEALTH AND SOCIAL SUPPORT AMONG UNIVERSITY STUDENTS:
A COMPARISON BETWEEN STEM AND HEALTH SCIENCES COURSES**

***SAÚDE MENTAL E SUPORTE SOCIAL EM UNIVERSITÁRIOS: COMPARAÇÃO
ENTRE CIÊNCIAS EXATAS (STEM) E CIÊNCIAS DA SAÚDE***

***SALUD MENTAL Y APOYO SOCIAL EN ESTUDIANTES UNIVERSITARIOS:
COMPARACIÓN ENTRE CARRERAS DE STEM Y CIENCIAS DE LA SALUD***



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How to reference this paper:

Bellinassi, I. V. T., & Cravo, F. A. M. (2026). Mental health and social support among university students: A comparison between STEM and Health Sciences courses. *Revista online de Política e Gestão Educacional*, 30, e026038. <https://doi.org/10.22633/rpge.v30i00.20273>



| Submitted: 27/05/2025
| Revisions required: 02/03/2026
| Approved: 12/03/2026
| Published: 28/04/2026

Editor: Prof. Dr. Sebastião de Souza Lemes

Deputy Executive Editor: Prof. Dr. José Anderson Santos Cruz

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ABSTRACT: Common Mental Disorders (CMDs) can be triggered by situations of psychological distress and may be influenced by socio-demographic variables. In the university context, these disorders may arise due to lack of time for health care, the stigmatization of mental illnesses, and difficulties adapting to the academic environment. This study aimed to characterize university students in terms of mental health indicators and perceived social support, comparing students from Science, Technology, Engineering, and Mathematics (STEM) and Health Sciences courses through a survey. Based on responses from 638 students (85.4% from STEM and 14.5% from Health Sciences), the results showed low levels of psychological distress and high levels of perceived social support, with significant differences between courses and genders. The findings suggest that social support and physical activity contribute to maintaining mental health, and no evidence of psychological distress directly attributable to university education was identified.

KEYWORDS: Psychological distress. Mental health. Social support. Students.

RESUMEN: Los Trastornos Mentales Comunes (TMC) pueden ser desencadenados por situaciones de sufrimiento psicológico y pueden estar influenciados por variables sociodemográficas. En el contexto universitario, estos trastornos pueden surgir debido a la falta de tiempo para el autocuidado, la estigmatización de las enfermedades mentales y las dificultades de adaptación al entorno académico. Este estudio tuvo como objetivo caracterizar a los estudiantes universitarios en cuanto a los indicadores de salud mental y la percepción de apoyo social, comparando a alumnos de carreras en las áreas de Ciencia, Tecnología, Ingeniería y Matemáticas (STEM) y Ciencias de la Salud (CS) mediante una encuesta. A partir de las respuestas de 638 estudiantes (85,4% de STEM y 14,5% de CS), se observó un bajo nivel de sufrimiento psicológico y una alta percepción de apoyo social, con diferencias significativas entre carreras y géneros. Los hallazgos sugieren que el apoyo social y la práctica de actividad física contribuyen al mantenimiento de la salud mental, además de no haberse identificado indicios de malestar psicológico atribuible directamente a la formación universitaria.

PALABRAS CLAVE: Distres psicológico. Salud mental. Apoyo social. Estudiantes.

RESUMO: Os Transtornos Mentais Comuns (TMCs) podem ser desencadeados por situações de sofrimento psicológico, podendo ser influenciados por variáveis sociodemográficas. No contexto universitário, esses transtornos podem ser provocados pela falta de tempo para cuidados com a saúde, pela estigmatização de doenças mentais e por dificuldades de adaptação ao ambiente acadêmico. Este estudo objetivou caracterizar universitários quanto aos índices de saúde mental e à percepção de suporte social, comparando alunos de cursos das áreas de Science, Technology, Engineering and Math (STEM) e de Ciências da Saúde (CS) por meio de um survey. A partir das respostas de 638 estudantes (85,4% STEM, e 14,5% CS) observou-se um baixo índice de sofrimento psicológico e alta percepção de suporte social, com diferenças significativas entre os cursos e entre os gêneros. Os achados sugerem que o suporte social e a prática de atividades físicas contribuem para a manutenção da saúde mental, além de não terem sido identificados indícios de adoecimento psicológico atribuídos diretamente à graduação.

PALAVRAS-CHAVE: Sofrimento psicológico. Saúde mental. Apoio social. Estudantes.

INTRODUCTION

Common Mental Disorders (CMD) can arise from prolonged periods of psychological distress, with anxiety and depressive mood being the most prevalent symptoms in these conditions (Campos et al., 2020; Lopes et al., 2022). It is understood that the development of CMD is strongly influenced by socio-cultural variables, such as financial conditions, gender, race, and other social markers (Gomes et al., 2020). In addition to socio-demographic variables, family, social, educational, and work contexts also act as risk or protective factors for the development of CMD; among these contexts is entry into and persistence in higher education. It should be noted here that CMD is not a psychiatric disorder per se, but rather a set of intrapersonal emotional, cognitive, and somatic relationships that negatively impact those affected (Monteiro et al., 2019).

Entering and persisting in higher education have been linked to the onset or worsening of mental health conditions (Graner & Cerqueira, 2019). Although experiences in higher education (HE) provide opportunities for developing new skills and professional growth, this environment is simultaneously marked by challenges related to adapting to a new phase with specific demands and requirements (Bolsoni-Silva et al., 2020; Fior & Almeida, 2023; Silva & Ximenes, 2022). Another factor affecting students is the unmet expectation that this environment will be welcoming and fun, as if it were an extension of high school (Sunde et al., 2022). Even so, a large proportion of college students (specifically younger students and males) tend to cope with their distress alone (Montagni et al., 2020). Research on mental health issues (i.e., depression, anxiety, suicidal ideation) among young college students has identified several predictive variables related to the phenomenon. Correlations have been found between CMD and other psychological distress, such as difficulties adapting to the academic environment (Sunde et al., 2022), difficulties with time management and social skills (Bolsoni-Silva et al., 2020), task overload and academic social pressure (Campos et al., 2020; Gomes et al., 2020; Gundim et al., 2022), socio-demographic characteristics, and student retention policies (Fior & Almeida 2023).

Furthermore, the covid-19 pandemic and social distancing policies have had negative impacts on the mental health of college students, resulting in increased rates of CMD, particularly among the most vulnerable students (Chien et al., 2022; Ribeiro et al., 2023). Gundim et al. (2022) demonstrated a prevalence of CMD following the pandemic period, particularly among nursing students. However, the literature also includes studies with

divergent results, in which the majority of students do not exhibit clinical symptoms related to depression, anxiety, or stress (Graner & Cerqueira, 2019; Rocha et al., 2021).

Variability in mental health indices and the prevalence of MHD among university students may stem from institutional conditions, such as the climate of the educational organization (Hoy et al., 2015), or from individual conditions, such as the presence of psychological distress prior to entering university (Bolsoni-Silva et al., 2022). Furthermore, there are indications that university students are exposed to situations negatively correlated with mental health, such as the abusive use of alcohol and other drugs (Fagundes et al., 2020), and poor sleep quality due to the multiple demands of work, study, and home life (Gomes et al., 2020). Currently, excessive use of social media is also emerging as a factor detrimental to the mental health of this population (Andrade et al., 2021; Ortuño-Sierra, 2024).

In an integrative literature review, Graner and Cerqueira (2019) identified risk and protective factors frequently associated with CMD among college students. The six main risk factors were: socio-demographic conditions (i.e., female gender, older age, and low income); health conditions (i.e., smoking and use of psychoactive substances, low physical activity, sleep quality, diet, and psychological distress/history of mental health issues); relational conditions (i.e., difficulty making friends, adjustment difficulties, feelings of rejection and not belonging, lack of social support); perceptions of academic life (i.e., first and final years in higher education, institutional pressure, uncertainty about course choice); psychological conditions (i.e., poor self-awareness, lack of coping strategies, deficits in authenticity and dispositional control); and, finally, social variables and violence (i.e., social discrimination based on markers of oppression such as gender, age, social class, sexual orientation, and others).

In summary, DMC can be triggered by psychological distress influenced by both socio-demographic and psychological variables (Campos et al., 2020; Gomes et al., 2020; Graner and Cerqueira, 2019). The higher education environment can be marked simultaneously by rewarding opportunities and by exhausting challenges and demands, which may lead to adverse effects on college students' mental health (Bolsoni-Silva et al., 2020; Fior & Almeida, 2023; Silva & Ximenes, 2022; Sunde et al., 2022). Among its consequences, the pandemic has also harmed the mental health of this segment of the population, as well as increased rates of DMC and social media use, which has drawn attention to problematic internet use (Gundim et al., 2022; Ricarte, 2020; Ortuño-Sierra, 2024). Despite this, some studies indicate that the sample of university students analyzed did not exhibit symptoms related to mental health conditions,

making further research on the topic necessary using multiple methodologies and across various universities (Bolsoni-Silva et al., 2022; Rocha et al., 2021).

Given this context, the objective of this study was to identify and characterize university students' mental health indicators and perceptions of social support based on two socio-demographic variables: gender and field of study. This study aims to quantitatively understand the "picture" of university students' psychological conditions, with a view to designing future projects focused on the remediation, prevention, and maintenance of mental health and well-being.

METHODOLOGY

This is an observational, descriptive, cross-sectional study that assessed mental health and perceived social support among college students. The study was approved by the Ethics Committee (No. 6.650.812; CAAE: 77212624.0.0000.5097) and is based on the analysis of data collected by the Emotional Collaboration Laboratory at the Higher Education Institution. This laboratory systematically monitors students through educational programs, experiential activities, workshops, and institutional support for socio-emotional needs.

Participants

A total of 1,164 students from a higher education institution in a city in the interior of the state of São Paulo participated in the study. Students from all programs, class schedules, and semesters were invited to voluntarily complete the questionnaires. Of the total, 818 consented to the use of their data for this study; 638 of these questionnaires were included in the analysis because they were fully completed. Thus, the sample for this study consists of 545 STEM students and 93 Health Sciences students (Biomedicine, Nursing, Dentistry, Veterinary Medicine, and Psychology). Among the STEM³ students (Science, Technology, Engineering, and Math), 407 self-identified as male, 138 as female, and one person as non-binary; among the Health Sciences students, there were 17 males, 76 females, and two non-binary individuals. The mean age of all students was 21 years ($Dp = 4.8$).

³ *Science, Technology, Engineering and Math.*

Instruments

The sample was drawn from the database compiled by the University Center's Emotional Collaboration Laboratory. Data were collected between April and May 2024. Data collection was conducted via an online form, which was distributed in person and through a digital app. The instruments used were:

1. A socio-demographic questionnaire containing 20 related questions to identify the participants' socio-demographic characteristics;
2. The Depression, Anxiety, Stress Scale (DASS-21) (Vignola & Tucci, 2014). This self-report instrument consists of 21 items, seven for each of the assessed factors. The assessed factors are depression ($\alpha = 0.92$), anxiety ($\alpha = 0.85$), and stress ($\alpha = 0.90$). This instrument uses a 5-point Likert scale, ranging from 0 to 4. We followed the suggestion by Martins et al. (2019) to analyze the results of the anxiety subscale by omitting item 2 (i.e., "I felt my mouth was dry") due to the low factor loading of this item;
3. Multidimensional Scale of Perceived Social Support (MSPSS) (Brugnoli et al., 2022). A self-report instrument consisting of 12 items, divided into four items per factor: (1) family social support, (2) social support from friends, and (3) social support from other significant others. The three factors presented a factor loading of $\alpha = 0.96$ in the validation and adaptation study of the scale.

Data analysis procedure

Descriptive and inferential statistics were calculated using JASP software. Given the imbalance between the sample groups and the lack of normality in the distributions, comparisons were performed using the Mann–Whitney test. To avoid interpretations based exclusively on statistical significance, effect sizes were also reported using the biserial rank correlation, allowing for an assessment of the magnitude of the differences between the groups. Finally, Spearman's correlation was used to verify the direction and strength of the relationships between variables.

RESULTS

In this section, we will present the results based on the participants' socio-demographic characteristics and psychometric assessments. Next, we will examine the differences in students' mean scores according to their fields of study (STEM and HS) and gender (male and female). Finally, we will present the correlation between mental health indices and social support. Discussions and suggestions for future research, as well as considerations regarding the mental and psychosocial health of college students, will be addressed in the next section.

Table 1 shows the characteristics of the sample for this study. A total of 638 students participated, including 545 STEM students and 93 HS students; regarding gender, there were 424 male participants, 214 female participants, and three non-binary individuals. The significant imbalance between participants from the two fields may have occurred because the Health Sciences programs were recently established, with no graduating class at the time of data collection. Additionally, STEM programs exhibit a marked gender bias, with 74% of students self-identifying as male. The fact that there is a significant number of male STEM students is a distinguishing feature of this study, given that most of the literature reviewed was based on research where the majority of the sample consisted of students in the health or humanities fields (Brugnoli et al., 2022; Cutrim et al., 2025; Fagundes et al., 2020; Maciel et al., 2023). In addition to gender, it was observed that 87.7% of students identify as heterosexual, with this group representing 90.2% of students in STEM programs. The students' racial identity is predominantly white (76.4%), followed by Black and Brown (18.4%). Of the participants, 65.5% work during off-hours, and only 14% sleep eight or more hours per night.

Regarding variables related to mental health, it was found that 35.7% of students had a history of mental health issues prior to entering higher education, and this percentage remained largely unchanged, as 32.6% reported experiencing mental health issues during their time in higher education. The prevalence of psychological distress before or during HE is higher among HS students, as is the use of psychotropic medications, observed in 15% of these students, compared to 6.4% of STEM students. Physical activity was more common among STEM students (45.4%) than among HS students (30.5%).

Table 1.
Socio-demographic and health characteristics of STEM and HS students

	STEM (%)	HS (%)	Total (%)
Gender			
<i>n</i>	545 (85.4)	93 (14.5)	638 (100)
<i>Male</i>	407 (74)	17 (17.8)	424 (66.4)
<i>Female</i>	138 (25)	76 (80)	214 (33.5)
<i>Non-binary</i>	1 (0.1)	2 (2.1)	3 (4)
Sexual orientation			
<i>Heterosexual</i>	493 (90.2)	67 (70)	560 (87.7)
<i>LGBT</i>	53 (9.7)	28 (30)	81 (12.6)
Race/ethnicity			
<i>White</i>	411 (75.2)	77 (81)	488 (76.4)
<i>Black and Brown</i>	106 (19)	12 (12)	118 (18.4)
<i>Asian</i>	24 (4.3)	6 (6.3)	30 (4.7)
Work			
<i>Yes</i>	367 (67.2)	51 (53.6)	418 (65.5)
<i>No</i>	179 (32.7)	44 (46.3)	223 (34.9)
Physical activity			
<i>Yes</i>	248 (45.4)	29 (30.5)	277 (43.4)
<i>No</i>	145 (26.5)	32 (33.6)	177 (27.7)
<i>Sometimes</i>	153 (28)	34 (25.7)	187 (29.3)
Mental health issues before college			
<i>Yes</i>	169 (30.9)	59 (62.1)	228 (35.7)
<i>No</i>	242 (44.3)	25 (26.3)	267 (41.8)
<i>Doesn't know</i>	135 (24.7)	11 (11.5)	146 (22.8)
Mental health issues during college			
<i>Yes</i>	154 (28.2)	54 (56.8)	208 (32.6)
<i>No</i>	275 (50.3)	24 (25.2)	299 (46.8)
<i>Doesn't know</i>	117 (21.4)	17 (17.8)	134 (21.0)
Use of psychotropic drugs			
<i>Yes</i>	35 (6.4)	15 (15.7)	50 (7.8)
<i>No</i>	492 (90.1)	74 (77.8)	566 (88.7)
<i>Doesn't know</i>	19 (3.4)	6 (6.3)	25 (3.9)
Average number of hours of sleep per night			
<i>Less than 4</i>	6 (1.0)	3 (3.1)	9 (1.4)
<i>4</i>	30 (5.4)	4 (1.2)	34 (5.3)
<i>5</i>	108 (19.7)	17 (17.8)	125 (19.5)
<i>6</i>	188 (34.4)	35 (36.8)	223 (34.9)
<i>7</i>	134 (24.5)	21 (22.1)	155 (24.2)
<i>8</i>	68 (12.4)	10 (10.5)	78 (12.2)
<i>More than 8</i>	12 (2.1)	5 (5.2)	17 (2.6)

Note. Prepared by the authors based on survey data.

When comparing mental health factors (i.e., depression, anxiety, and stress) and perceived social support (i.e., family, friends, and other significant others), it was found that both groups (STEM and HS students) had low scores on the DASS-21 and high scores on the

MSPSS scales. This indicates that psychological distress is below clinical thresholds, and the perception of social support is above the midpoint of the scale. All self-report data should be interpreted with caution, as it requires a significant degree of self-reflection.

Table 2.

Differences in mental health and perceived social support among STEM and HS students

		STEM	HS	U	Effect size ¹	p
DASS-21	<i>Depression</i>	0.97 (0.8)	1.31 (0.9)	19787.000	-0.219	< .001
	<i>Anxiety</i>	0.98 (0.8)	1.64 (0.8)	15172.000	-0.401	< .001
	<i>Stress</i>	1.20 (0.7)	1.78 (0.7)	15102.500	-0.404	< .001
MSPSS	<i>Family</i>	5.33 (1.6)	5.33 (1.5)	25455.500	0.004	0.945
	<i>Friends</i>	5.14 (1.6)	5.33 (1.6)	23347.500	-0.079	0.222
	<i>Significant others</i>	5.61 (1.5)	5.98 (1.3)	21603.000	-0.148	0.020

Caption: STEM (Science, Technology, Engineering, Math), HS (Health Sciences), Mann–Whitney U, ¹Rank-biserial correlation.

Note. Prepared by the authors based on survey data.

Table 2 shows that the mental health scores of HS students are significantly higher on average than those of STEM students, indicating greater psychological distress. These results should be interpreted with caution given the imbalance in the number of participants between the groups; thus, in addition to the p-value, it is recommended to consider the effect size of the results. Particularly regarding anxiety and stress indices, the effect size of the differences between the means was moderate (0.401 and 0.404, respectively). However, no difference was found between the means of the STEM and HS groups regarding perceived social support across the three assessed factors (i.e., family, friends, and significant others).

The same pattern of differences is observed when analyzing the mean differences and effect sizes based on grouping students by gender (Table 3). Women had significantly higher means for depression, anxiety, and stress. Again, anxiety and stress were the categories with moderate effect sizes (0.483 and 0.480, respectively). There was also a statistically significant difference for the “significant others” factor ($U = 36339.000$, $p < 0.001$), though with a small effect size (-0.199). Given the small number of non-binary individuals ($n = 3$), no analysis of mean differences was conducted for this group.

Table 3.*Differences in mental health indicators and perceived social support by student gender*

		Male	Female	U	Effect size ²	p
DASS-21	<i>Depression</i>	0.89 (0.7)	1.25 (0.9)	35164.000	-0.225	< .001
	<i>Anxiety</i>	0.71 (0.7)	1.59 (0.8)	23452.500	-0.483	< .001
	<i>Stress</i>	1.06 (0.7)	1.73 (0.7)	23585.000	-0.480	< .001
MSPSS	<i>Family</i>	5.27 (1.6)	5.47 (1.5)	42312.500	-0.067	0.161
	<i>Friends</i>	5.07 (1.6)	5.36 (1.5)	40392.500	-0.110	0.023
	<i>Others</i>	5.50 (1.5)	6.02 (1.2)	36339.000	-0.199	< .001

Caption: ²Rank-biserial correlation.

Note. Prepared by the authors based on survey data.

We chose to perform a Spearman correlation test to examine the relationships between mental health factors and perceived social support in this sample. Table 4 shows that the depression factor is correlated with all other factors. Furthermore, with the exception of the “significant others” factor in the MSPSS, all factors were correlated with one another, with variations in the strength of these correlations.

Table 4.*Correlation between Mental Health (DASS-21) and Perceived Social Support (MSPSS) indices*

	Depression	Anxiety	Stress	Family	Family	Others
Depression	-					
Anxiety	0.727***	-				
	< .001	-				
Stress	0.739***	0.839***	-			
	< .001	< .001	-			
Family	-0.318***	-0.214***	0.185***	-		
	< .001	< .001	< .001	-		
Friends	-0.204***	-0.102**	-0.102**	0.417***	-	
	< .001	0.010	0.010	< .001	-	
Others	-0.206***	-0.062	-0.029	0.600***	0.521***	-
	< .001	0.117	0.460	< .001	< .001	-

Caption: * p < .05, ** p < .01, *** p < .001.

Note. Prepared by the authors based on survey data.

The correlation matrix shows that the mental health indices for depression, anxiety, and stress exhibit strong associations with one another (above .70). In addition, the mental health indices of depression and anxiety showed moderate and small-to-moderate negative correlations with the “family” support perception index, indicating the importance of family ties as a protective factor in mental health.

DISCUSSION

The objective of this study was to characterize university students in STEM and Health Sciences programs in terms of mental health indicators and perceptions of social support. Overall, the results provide an initial overview of these dimensions in the context under investigation and highlight relevant factors for the development of institutional strategies aimed at promoting well-being and quality of life at the university. Based on socio-demographic data, the sample of this study is predominantly composed of self-identified white students ($n = 488$), male students ($n = 424$), and students in STEM fields ($n = 545$). The significant number of STEM students is a distinguishing feature of this study, considering that Brugnoli et al. (2022) highlighted the importance of conducting research with diverse population samples that are not limited to health-related courses, which are frequently represented in the literature. Overall, the data indicate satisfactory levels of mental health and perceived social support among participants; however, there are points for discussion regarding the grouping of these students by field of study and gender.

Regarding mental health, the data contradict some studies, such as that by Monteiro et al. (2019), which indicate that undergraduate students experience mental health issues during their studies. Although Graner and Cerqueira (2019) report that rates of CMD among college students are higher than in the general population, the results of this study indicated low levels of psychological distress, corroborating the research by Rocha et al. (2021), which also did not identify symptoms corresponding to these conditions.

Among HS participants, 62.1% ($n = 59$) reported having experienced psychological distress before university, and there was little change regarding distress during HE (56.8%, $n = 54$). These figures differ from the study by Silva et al. (2025), which highlights a context of psychological distress in HE. The literature reveals that some of the factors associated with student mental health issues are distance from family and limited leisure time (Monteiro et al., 2019); on the other hand, physical activity and social interaction may serve as protective factors against mental health issues (Silva & Ximenes, 2022; Trigueiro et al., 2021).

In this study, physical activity was reported by 43% of the students, a factor that may be related to the low prevalence of CMD symptoms. This finding may be linked to the difference in psychological distress at HE between STEM and HS students, given that STEM students reported higher average levels of physical activity. Future research should seek to identify the directionality and causal effect of physical activity and CMD symptoms.

Concurrently, a divergence is observed in levels of depression, anxiety, and stress across different academic fields, and in this sample, higher averages are seen among HS students. The difference in mental health indices between students in STEM and HS fields may be due to other contextual variables, as some studies diverge from and others converge with the findings of this study. For example, the studies by Bezerra et al. (2021) and Lourenço and Oliveira (2022) investigated engineering students and identified rates of depression and anxiety related to contextual variables such as the need for autonomy and responsibilities, which were linked to mental health indicators.

It is worth noting that a higher prevalence of CMD among health sciences students has frequently been identified in survey studies (Graner & Cerqueira, 2019; Gundim et al., 2022; Murakami et al., 2019). The results of the present study follow this trend, as HS students exhibited significantly higher levels of depression, anxiety, and stress compared to students in STEM programs. Although effect sizes range from small to moderate, the results indicate a consistent pattern of greater psychological distress in this group. Another variable that appears to be related to good mental health indicators is interpersonal relationships (Silva & Ximenes, 2022). Based on the results, it was observed that most students reported a high perception of social support across the three factors investigated (i.e., family, friends, and other significant others). This finding is also relevant when considering that the correlational analyses indicated negative associations between indicators of social support and symptoms of depression, anxiety, and stress, suggesting that the presence of support networks may function as an important psychological protective factor. Finally, only 7.8% of students reported using psychotropic drugs. This result is lower than the 33% identified in the study by Assunção and Marôco (2020) and may be related to the mental health characteristics of the sample investigated.

In terms of gender differences, it is observed that female students, as well as HS students, exhibit higher levels of depression, anxiety, and stress compared to male students. This finding has been confirmed in several studies on university mental health (Gianjacomio et al., 2025; Gundim et al., 2022; Ribeiro et al., 2023; Trigueiro et al., 2021). In the present study, in addition to statistical significance, moderate effect sizes were observed for anxiety and stress, indicating that these differences are not only statistically detectable but also have practical relevance. Although findings related to field of study remain relatively inconsistent in the literature, the gender breakdown has shown greater consistency, pointing to greater vulnerability to psychological distress among women. This scenario may be related to the

accumulation of social and academic roles, as well as to multiple situations of vulnerability and exposure to psychological and sexual abuse (Trigueiro et al., 2021; Gundim et al., 2022).

The average number of hours of sleep remained relatively constant across the groups analyzed and revealed that 61.1% (n = 391) of students sleep six hours a day or less, an average that is below what is considered ideal (Dias et al., 2025). This finding warrants further investigation, as other variables may be influencing the low sleep duration observed. However, sleep disturbances have frequently been associated with CMD, Burnout Syndrome, or occupational burnout (Gianjacomio et al., 2025; Lopes et al., 2022; Maciel et al., 2023). The strong association observed among the DASS-21 factors also suggests that symptoms of depression, anxiety, and stress tend to occur in an interrelated manner, indicating a pattern of psychological distress shared across these dimensions. Sleep quality also needs to be understood in light of the social conditions experienced by the students. In this study, it was observed that 65.5% of participants work, which often involves studying during off-hours, waking up very early, and going to bed later. In this regard, it is important to highlight the social nature of sleep quality, since academic and work demands can significantly alter daily sleep, eating, and interpersonal relationship dynamics.

Despite the significance of the results, it is essential to consider some limitations of this study. Because this is an observational, descriptive, cross-sectional study with a different number of participants in the STEM and HS fields, it is not possible to establish clear causal relationships between the variables. Furthermore, participants' potential discomfort with sensitive topics may have influenced their responses, introducing biases and affecting the reliability of certain information.

The results of this study highlight the importance of strengthening the support network among students, given the observed association between social support and lower levels of psychological distress. Encouraging physical activity and promoting better sleep quality have also proven to be important, given their potential protective role against mental illness (Silva & Ximenes, 2022). In this regard, initiatives focused on students' physical and psychological health should be incorporated into higher education institutions' educational policies, going beyond informational presentations that disregard students' social conditions and the very institutional role of universities in promoting or exacerbating psychological distress (Gomes et al., 2020; Graner & Cerqueira, 2019).

At the same time, it is essential to promote an academic environment free of gender barriers, especially given the differences observed in mental health indicators between women

and men. Such strategies can contribute to maintaining psychological well-being during undergraduate studies and foster a healthier academic journey. In this regard, institutional actions must go beyond one-off initiatives such as activities limited to commemorative dates. Higher education institutions should consider structural measures that integrate, in addition to gender, aspects such as race, class, sexuality, disabilities, and other social markers.

Finally, it is clear that future research should include more representative samples of non-binary individuals, as well as students in health sciences and humanities and social sciences programs. In addition to more diverse population analyses, new investigations could examine the presence and effectiveness of institutional programs aimed at promoting health and quality of life within the academic community. Such studies could contribute to the description and evaluation of intervention and longitudinal programs designed to support the academic community.

FINAL CONSIDERATIONS

The aim of this study was to assess and characterize mental health indicators and perceptions of social support among college students at a higher education institution in the interior of the state of São Paulo, comparing students in STEM (Science, Technology, Engineering, and Math) and Health Sciences (HS) programs.

Overall, the results indicated low levels of psychological distress in the analyzed sample, with lower levels of depression, anxiety, and stress than those frequently described in the literature. Nevertheless, higher rates of these symptoms were observed among female students and among students in health-related programs. Concurrently, high levels of perceived social support, a considerable frequency of physical activity, and low use of psychotropic drugs were identified, although the average number of hours of sleep was found to be below the recommended amount. These findings contrast with some of the literature that points to a more critical mental health scenario in higher education (Monteiro et al., 2019; Silva et al., 2025) and contribute to a broader understanding of the influence of socio-demographic variables on the psychological well-being of university students.

It should be noted, however, that the results cannot be generalized, since the sample consisted mainly of male, white students enrolled in STEM programs. Thus, we recommend conducting further research with samples that are more representative and diverse of the

university population, as well as studies that examine the presence and effectiveness of institutional initiatives aimed at promoting mental health and quality of life in the academic environment. These results reinforce the importance of understanding university mental health not only as an individual phenomenon but also as a product of the social and institutional conditions that shape the academic experience.

REFERENCES

- Andrade, A. L. M., Enumo, S. R. F., Passos, M. A. Z., Vellozo, E. P., Schoen, T. H., Kulik, S. R., & Vitalle, M. S. S. (2021). Problematic internet use, emotional problems and quality of life among adolescents. *Psico-USF*, 26(1), 41–51. <https://doi.org/10.1590/1413-82712021260104>
- Assunção, H., & Marôco, J. (2020). Utilização de medicamentos em estudantes universitários com burnout. *Psicologia, Saúde & Doenças*, 21(1), 15–21.
- Bezerra, J. E. M. S., Fernandes, C. E. R., Mendes, L. C. B., Jorge, M. S. B., & Coelho, M. R. (2021). Saúde mental de estudantes dos cursos de graduação em engenharia. *Revista de Ensino de Engenharia*, 40, 321–333. <https://doi.org/10.37702/REE2236-0158.v40p321-333.2021>
- Bolsoni-Silva, A. T., Fogaça, F. F. S., Martins, C. G. B., & Tanaka, T. F. (2020). *Promove-universitários: Treinamento de habilidades sociais: Guia teórico e prático*. Hogrefe.
- Brugnoli, A. V. M., Gonçalves, T. R., Silva, R. C. D., & Patussi, M. P. (2022). Evidências de validade da escala multidimensional de suporte social percebido (EMSSP) em universitários. *Ciência & Saúde Coletiva*, 27(11), 4223–4232. <https://doi.org/10.1590/1413-812320222711.08592022>
- Campos, T. C., Vêras, R. M., & Araújo, T. M. (2020). Transtornos mentais comuns em docentes do ensino superior: Evidências de aspectos sociodemográficos e do trabalho. *Avaliação*, 25(3), 745–768. <https://doi.org/10.1590/S1414-40772020000300012>
- Chien, W. T., Leung, A. W. Y., Lam, S. K. K., Choi, K. C., & Wong, C. L. (2022). Psycho-behavioural responses of the general population to COVID-19 after mass vaccination: A cross-sectional study. *Global Mental Health*, 9, 389–396. <https://doi.org/10.1017/gmh.2022.45>
- Cutrim, V., Barth, C. A., Menezes, A. B., Costa, T. D., & Ramos, C. C. (2025). A relação entre diversidade sexual e saúde mental no ensino superior. *Caderno Pedagógico*, 22(4), e14252. <https://doi.org/10.54033/cadpedv22n4-193>
- Dias, Í. F. N., Leão, S. E. G., Brasil, M. Q. A., Iglesias, É. P., & Lessa, M. M. (2025). Avaliação do sono e da sonolência diurna em estudantes de medicina de uma universidade pública. *Revista Brasileira de Educação Médica*, 49(2), e063. <https://doi.org/10.1590/1981-5271v49.1-2023-0140>
- Fagundes, L. C., Paz, C. J. R., Freitas, D. A., Barbosa, H. A., & Soares, W. D. (2020). Consumo de álcool entre universitários na cidade de Montes Claros – MG. *Arquivos Catarinenses de Medicina*, 49(3), 12–22. <https://doi.org/10.63845/6qmkd548>
- Fior, C., & Almeida, L. S. (2023). Transição e adaptação acadêmica dos estudantes ao ensino superior. In A. Osti, C. Fior, C. P. P. Canal, & L. S. Almeida (Orgs.), *Ensino superior: Mudanças e desafios na perspectiva dos estudantes* (pp. 59–76). Pedro & João.
- Gianjacomio, T. R. F., Rodrigues, R., Guidoni, C. M., & Giroto, E. (2025). Análise do papel mediador da resiliência na relação entre apoio social e burnout em estudantes

- universitários. *Educação em Revista*, 41, e52443. <https://doi.org/10.1590/0102-469852443>
- Gomes, C. F. M., Pereira Junior, R. J., Cardoso, J. V., & Silva, D. A. (2020). Transtornos mentais comuns em estudantes universitários: Abordagem epidemiológica sobre vulnerabilidades. *SMAD, Revista Eletrônica Saúde Mental Álcool e Drogas*, 16(1), 1–8. <https://doi.org/10.11606/issn.1806-6976.smad.2020.157317>
- Graner, K. M., & Cerqueira, A. T. A. R. (2019). Revisão integrativa: Sofrimento psíquico em estudantes universitários e fatores associados. *Ciência & Saúde Coletiva*, 24(4), 1327–1346. <https://doi.org/10.1590/1413-81232018244.09692017>
- Gundim, V. A., Encarnação, J. P., Fontes, S. K. R., Silva, A. A. F., Santos, V. T. C., & Souza, R. C. (2022). Transtornos mentais comuns e rotina acadêmica na graduação em enfermagem: Impactos da pandemia de COVID-19. *Revista Portuguesa de Enfermagem de Saúde Mental*, (27), 21–37. <https://doi.org/10.19131/rpesm.322>
- Hoy, W. K., Miskel, C. G., & Tarter, C. J. (2015). *Administração educacional: Teoria, pesquisa e prática* (9ª ed.; H. O. Guerra, Trad.). Penso.
- Lopes, F. M., Lessa, R. T., Carvalho, R. A., Reichert, R. A., Andrade, A. L. M., & De Micheli, D. (2022). Transtornos mentais comuns em estudantes universitários: Uma revisão sistemática da literatura. *Psicologia em Pesquisa*, 16(1), e31105. <https://doi.org/10.34019/1982-1247.2022.v16.31105>
- Lourenço, T. S., & Oliveira, M. S. P. (2022). Saúde mental: Transtornos em estudantes de engenharia. *Psicologia e Saúde em Debate*, 8(2), 122–143. <https://doi.org/10.22289/2446-922X.v8n2a9>
- Maciel, F. V., Wendt, A. T., Demenech, L. M., & Dumith, S. C. (2023). Fatores associados à qualidade do sono de estudantes universitários. *Ciência & Saúde Coletiva*, 28(4), 1187–1198. <https://doi.org/10.1590/1413-81232023284.14132022>
- Martins, B. G., Silva, W. R., Maroco, J., & Campos, J. A. D. B. (2019). Escala de depressão, ansiedade e estresse: Propriedades psicométricas e prevalência das afetividades. *Jornal Brasileiro de Psiquiatria*, 68(1), 32–41. <https://doi.org/10.1590/0047-2085000000222>
- Montagni, I., Tzourio, C., Cousin, T., Sagara, J. A., Bada-Alonzi, J., & Horgan, A. (2020). Mental health-related digital use by university students: A systematic review. *Telemedicine and e-Health*, 26(2), 131–146. <https://doi.org/10.1089/tmj.2018.0316>
- Monteiro, L. R., Munhoz, R. L., & Lara, S. (2019). Associação entre transtornos mentais comuns e o nível de atividade física em estudantes universitárias. *Saúde*, 45(3), 1–10. <https://doi.org/10.5902/2236583437686>
- Murakami, K., Panúncio-Pinto, M. P., Santos, J. L. F., & Troncon, L. E. A. (2019). Estresse psicológico em estudantes de cursos de graduação da área da saúde: Subsídios para promoção de saúde mental. *Revista de Medicina*, 98(2), 108–113. <https://doi.org/10.11606/issn.1679-9836.v98i2p108-113>

- Ortuño-Sierra, J., Pérez-Sáenz, J., Mason, O., Albéniz, A. P., & Fonseca-Pedrero, E. (2022). Uso problemático de internet em adolescentes: Validación en español de la escala de uso compulsivo de internet (CIUS). *Adicciones*, 36(3), 247–256. <https://doi.org/10.20882/adicciones.1801>
- Ribeiro, S., Silva, A. N., Dias Neto, D., Gloster, A., Kassianos, A., & Karekla, M. (2023). Impacto psicológico da COVID-19: Efeito de mediação-moderada do suporte social e da flexibilidade psicológica. *Psicologia, Saúde & Doenças*, 24(2), 632–643.
- Ricarte, É. (2020). A expansão do processo de digitalização durante a pandemia de COVID-19. *Finisterra*, 55(115), 53–60. <https://doi.org/10.18055/Finis20350>
- Rocha, M. S., Silva, Y. G., Santos, A. P., Nascimento, P. S., Rodrigues, T. S., Barbosa, V. M., Andrade, E. N., & Marinho, M. S. (2021). Ansiedade, depressão e estresse em estudantes universitários durante a pandemia do COVID-19. *Brazilian Journal of Development*, 7(8), 80959–80970. <https://doi.org/10.34117/bjdv7n8-352>
- Silva, A. M. S., & Ximenes, V. M. (2022). Discussões sobre saúde mental e suporte social entre estudantes universitários. *Revista Ciências Humanas*, 15, e31. <https://doi.org/10.32813/2179-1120.2022.v15.n1.a850>
- Silva, F. A., Fonseca, S. F., Barroso, E. P., Martins, L. C., Farias, D. G., & Ribeiro, R. S. (2025). Saúde mental: A universidade desafiada a agir para garantir a permanência estudantil num contexto de adoecimento. *Revista de Gestão e Secretariado*, 16(1), e4513. <https://doi.org/10.7769/gesec.v16i1.4513>
- Sunde, R. M., Oliveira, N. C., Jaeger Filho, C. C., Esteves, L. F., Paz, B. M., & Machado, W. L. (2022). Fatores de risco associados ao suicídio em universitários: Uma revisão de escopo. *Estudos e Pesquisas em Psicologia*, 22(2), 832–852. <https://doi.org/10.12957/epp.2022.68656>
- Trigueiro, E. S. O., Caldas, G. F. R., & Silva, J. M. F. L. (2021). Saúde mental e sofrimento psíquico em estudantes universitários. *Educação em Perspectiva*, 12, e021021. <https://doi.org/10.22294/eduper/ppge/ufv.v12i01.9675>
- Vignola, R. C. B., & Tucci, A. M. (2014). Adaptation and validation of the Depression, Anxiety and Stress Scale (DASS) to Brazilian Portuguese. *Journal of Affective Disorders*, 155, 104–109. <https://doi.org/10.1016/j.jad.2013.10.031>

CRedit Author Statement

- ☐ **Acknowledgements:** We would like to thank Prof. Raquel Barros and her entire team at the Emotional Collaboration Laboratory (ENLACE) at Facens University Center.
 - ☐ **Funding:** None.
 - ☐ **Conflicts of interest:** None
 - ☐ **Ethical approval:** This study was approved by the Research Ethics Committee (No. 6.650.812; CAAE: 77212624.0.0000.5097).
 - ☐ **Data and materials availability:** Not available, as the questionnaires contain sensitive data with restricted access to ENLACE.
 - ☐ **Authors' contributions:** Ingrid Bellinassi, Scientific Initiation scholarship recipient, writing and descriptive data analysis; Felipe Augusto Monteiro Cravo, project advisor, writing and project conception, inferential data analysis, methodology, and results.
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Processing and editing: Editora Ibero-Americana de Educação
Review, formatting, standardization, and translation

