



# Effects of Sociocultural and Academic Factors on the Mental Health of College Students: A Systematic Review

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## ABSTRACT

Mental disorders among college students, especially in the medical field, are a rising public health concern and can impede academic progress. Despite their prevalence, the impact of sociocultural and academic factors on students' mental health across diverse disciplines and academic levels remains under-explored. Our systematic review sought to understand how factors, including gender identity, ethnicity, racial background, sexual orientation, housing status, economic conditions, course specifics, academic performance, and field of study, influence depression, anxiety, or suicidal ideation. We screened five databases, prioritizing longitudinal, cross-sectional, and case-control studies, excluding intervention-based or qualitative research, reviews, theses, and editorials, or those without validated tools. From the studies, 32, representing 642,893 students, were pertinent. A noteworthy finding from our review was the pronounced prevalence of depression, anxiety, and suicidal ideation among these students. Risks were particularly heightened for females and individuals from marginalized sexual, racial, ethnic, and economic backgrounds. Given the growing importance and diversity of student populations, our review emphasizes the urgent need for further research and mental health initiatives that cater to students' vast array of sociocultural and economic backgrounds.

## Keywords

college students, mental health, sociocultural factors, academic life

## RESUMO

Os transtornos mentais entre estudantes universitários, especialmente na área médica, são uma preocupação crescente de saúde pública e podem impedir o progresso acadêmico. Apesar da sua prevalência, o impacto dos fatores socioculturais e acadêmicos na saúde mental de estudantes em diversas disciplinas e níveis acadêmicos permanece pouco explorado. Esta revisão sistemática procurou compreender como fatores, incluindo identidade de gênero, etnia, origem racial, orientação sexual, situação de moradia, condições econômicas, especificidades do curso, desempenho acadêmico e área de estudo, influenciam a depressão, a ansiedade ou a ideação suicida. Foram examinadas cinco bases de dados, priorizando estudos longitudinais, transversais e de caso-controle, excluindo pesquisas, revisões, teses e editoriais baseadas em intervenções ou qualitativas, ou aquelas sem ferramentas validadas. Dos estudos, 32, representando 642.893 estudantes, foram examinados. Um achado digno de nota da nossa revisão foi a pronunciada prevalência de depressão, ansiedade e ideação suicida entre esses estudantes. Os riscos foram particularmente aumentados para as mulheres e indivíduos pertencentes a minorias sexuais, raciais, étnicas e econômicas. Dada a crescente importância e diversidade das populações estudantis, a nossa análise enfatiza a necessidade de mais investigação e iniciativas de saúde mental que atendam à vasta gama de origens socioculturais e econômicas de discentes de ensino superior.

## Palavras Chave

estudantes universitários, saúde mental, fatores socioculturais, vida acadêmica

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### Introduction

The global escalation in mental health issues among college students is becoming increasingly evident. Recent research paints a concerning picture, showing prevalent mental disorders, especially depression and anxiety, among these young adults across numerous countries (Auerbach et al., 2018; Backhaus et al., 2020; Eisenberg et al., 2013; Rentería et al., 2021). The repercussions of these issues are not confined to personal well-being alone. They ripple through academic achievements, family dynamics, and even broader societal structures (Evans-Lacko & Thornicroft, 2019; Ishii et al., 2018). Recognizing the foundational role these students will play in shaping our future, it's crucial to prioritize their mental health.

This isn't a new problem. Historical data highlights a persistent concern about the mental wellness of college students, emphasizing an uptick in conditions like depression and anxiety over time (Eisenberg et al., 2007). A significant initiative led by the World Health Organization, termed the "World Mental Health International College Student Initiative," delved deep into this issue across eight countries. The aim was to bridge the gap between widespread epidemiological findings and focused clinical data on student mental health (Cuijpers et al., 2019). Their research, corroborated by other scholarly reports, reinforces the prevalent and enduring nature of psychological challenges in this demographic (Alonso et al., 2018; Auerbach et al., 2018).

The growing concern about the mental health of this population group is evidenced by recent statistics from the American College Health Association (ACHA, 2023), which shows that 36.1% of students were diagnosed with anxiety and 28.4% with depression. More than mere numbers, this data highlights an emerging crisis that has significant implications for student success, retention and well-being. However, the literature on the topic presents variations. While some studies, such as that by Bruffaerts et al. (2018), alarm with their rates, others, such as Falade et al. (2020), suggest a more moderate prevalence. Given this, it is important to consider the interaction of multiple factors, such as gender identity, ethnicity, sexual orientation, economic status and academic performance, which collectively influence the mental health of this group.

However, despite extensive research into the prevalence of these problems among college students, there is a gap in the literature that jointly reviews the social, cultural,



economic, and educational factors that influence their mental health. Therefore, this review sets out to address exactly this question: What is the impact of sociocultural and academic determinants on mental health outcomes, such as depression, anxiety and suicidal ideation, in college students?

By focusing on the impact of sociocultural and academic factors, including gender, ethnicity, sexual orientation, economic status and academic performance, on mental health outcomes – depression, anxiety and suicidal ideation – of college students, this systematic review aims to offer a comprehensive understanding of these interactions. Recognizing the importance of this knowledge to shape effective academic practices and policies, and to promote the well-being of the university student community, it is hoped that the analyzes will serve as a support for policies and interventions that minimize the risk of psychological disorders in this demographic.

### **Method**

In conducting this systematic review, our primary research question was formulated using the PICO format, focusing on the Population (college students), Intervention (sociocultural and academic factors), Comparison (different levels or absence of these factors), and Outcomes (depression, anxiety, suicidal ideation). We adhered to the guidelines and checklist established by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), as outlined by Page et al. (2021). Furthermore, we ensured transparency and accountability in our review process by registering the protocol with the International Prospective Register of Systematic Reviews (PROSPERO), assigned the registration number CRD42021264160.

### ***Eligibility Criteria***

The eligibility criteria for the review aimed at observational and quantitative studies published in peer-reviewed journals in English, Portuguese, or Spanish, examining sociocultural and academic factors as predictors of depression, anxiety, or suicidal ideation in college students. Validated measures were used to assess outcome variables, and the studies were published in the last five years. The review excluded intervention studies, qualitative research, literature reviews, theses, editorial/opinion articles, studies not assessing college students, and those not using validated measures. The included studies were grouped into summaries based on similarities and differences

in study designs, populations, and findings to provide a comprehensive overview of the key trends and patterns in the literature.

### ***Information sources***

In the pursuit of a comprehensive literature review, electronic databases such as Web of Science, Scopus, PubMed, PsycINFO, and the Scientific Electronic Library Online (Scielo) were exhaustively searched from July 7-17, 2021. The specific search string, including MeSH terms used, is provided in the supplementary materials. To ensure a holistic approach, reference lists of the articles chosen for full-text analysis were also examined. To maintain up-to-date relevance, the database searches were replicated using the identical protocol on April 11, 2022.

### ***Selection process***

To facilitate collaboration between reviewers during the study selection process for this systematic review, the studies retrieved through the search strategies were imported into the Rayyan program (Ouzzani et al., 2016). The first author of this work screened the titles and abstracts for relevance, and duplicates were removed. Subsequently, a second reviewer assessed the adequacy of selected titles and abstracts, and discrepancies were resolved by a third reviewer. A detailed list of excluded articles, after full-text reading, and reasons for their exclusion can be found in the supplementary materials. The reviewers adhered to previously defined criteria for the selection of studies, and two other reviewers checked the selected documents to minimize bias and ensure that no important studies were overlooked. In case of any disagreement, a consensus was reached through discussion among the researchers regarding whether a study should be included or excluded.

### ***Data collection process***

For garnering requisite data, studies deemed suitable were systematically assessed utilizing a data extraction template, encompassing various sociocultural, academic, and psychological health facets. These facets included ethnicity, race, gender, sexual orientation, housing status, economic standing, academic discipline, admission modality, scholastic performance, attrition rates, and measures of anxiety, depression, and suicidal



behaviors. To ensure rigorous precision and uniformity in the data collation process, three autonomous reviewers were employed. Each reviewer undertook the extraction process independently, and subsequent comparisons of their findings were made. Discrepancies, if any, were deliberated upon until unanimous agreement was achieved. The utilization of the Rayyan software further augmented the efficacy of our data collection methodology.

### ***Data items***

The study collected data on five key variables: (1) gender, (2) ethnicity, (3) sexual orientation, (4) economic status, and (5) academic performance. These were analyzed in relation to mental health outcomes such as levels of anxiety, depression, and suicidal behavior. The results pertaining to each outcome domain were gathered from every study. When the results were inconsistent, the most relevant results were chosen based on the research question being investigated. In cases of missing or unclear information, the reviewers reached out to the primary authors of the study to clarify or obtain the necessary data. The reviewers also cross-checked the information from other sources, such as the study authors, when necessary.

### ***Bias assessment risk study***

The risk of bias in the included studies was evaluated by two independent reviewers following a critical assessment tool from the Joanna Briggs Institute, which focuses on assessing the reliability, relevance, and results of published articles (Aromataris & Munn, 2020). The tool signs a classification of “yes”, “no”, “uncertain” and “not applicable” to evaluate the domains of sample inclusion, description of study participants, measurements validation and reliability, and measurement of results and analysis.

### ***Synthesis methods***

#### ***Data Preparation***

After identifying eligible studies, each dataset underwent a rigorous preparation process to ensure its suitability for synthesis. This included filling in any missing summary statistics, converting units or scales where necessary for standardization, and

aligning the data formats across studies. Any inconsistencies or ambiguities in the original datasets were addressed by revisiting the primary publications and contacting authors when necessary.

#### *Tabulation of Individual Studies*

The results from individual studies were systematically tabulated to create a summary table. This table included key information such as sample size, demographics, study design, mental health outcomes measured, and key findings related to sociocultural and academic factors. The aim was to clearly identify patterns and trends across different studies and settings.

#### *Narrative Synthesis*

A narrative synthesis was employed, given the expected heterogeneity among the included studies, to provide an in-depth understanding of the findings. This approach allowed for the contextualization of the quantitative data within the broader research landscape. It considered how sociocultural and academic factors interacted and influenced mental health outcomes in college students.

#### *Integration of Findings*

Finally, findings from both the tabulated results were integrated to offer a nuanced view of the impact of sociocultural and academic factors on student mental health. Cross-study comparisons were facilitated through a series of thematic maps and graphs that visually represented key trends and discrepancies.

Overall, the synthesis methods used in this systematic literature review were tailored to provide a rigorous and comprehensive analysis of existing evidence. By employing narrative synthesis, the methods were well-suited to deal with the multifaceted data available. The results provide a robust foundation for future research, and particularly for shaping interventions and policies aimed at improving student mental health.



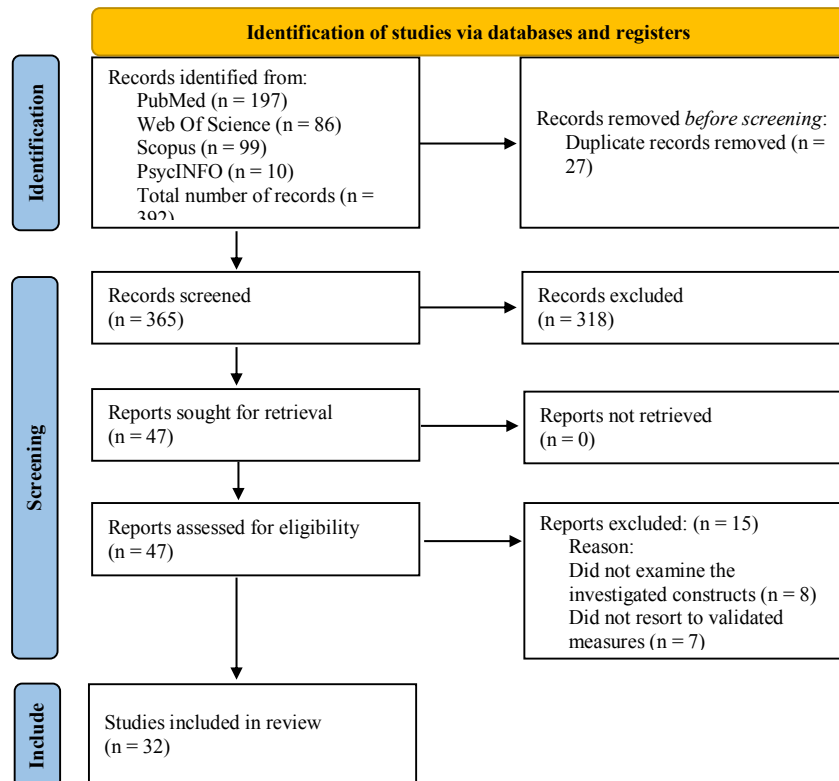
## **Results**

### ***Studies Selection***

To identify eligible studies for inclusion in this systematic review, a systematic literature search was conducted across potentially relevant databases. A total of 392 records were identified through these searches, and after removing duplicates, 365 studies were selected based on their titles and abstracts. However, upon full-text evaluation of 47 articles, 318 were subsequently excluded based on their failure to meet the pre-established inclusion criteria regarding sample, construct examined, outcome variables, publication date, and study design.

The remaining 47 articles were then subjected to a rigorous evaluation process, with three reviewers assessing them against the established criteria. Of these, 15 were excluded for not examining sociocultural and academic factors as predictors in the analysis, not assessing depression, anxiety, or suicidal ideation as outcome variables, or not using validated measures to assess outcome variables. To further expand the pool of eligible studies, a snowball search was conducted on the references of the selected articles. No additional papers meeting the inclusion criteria were identified through this process. As a result of these selection procedures, 32 articles were ultimately included in this systematic review, as illustrated in Figure 1.

Among the studies that were excluded, 77 did not include college students in their sample, 71 did not examine the investigated constructs, and 75 did not assess depression, anxiety, or suicidal ideation as outcome variables. Furthermore, 23 studies were excluded because they were not published within the last five years, and 72 did not meet eligibility criteria regarding study design. In addition to these exclusions, another 15 studies were removed from the review. These studies did not examine the investigated constructs and did not resort to validated measures. It is important to note that only studies that met the inclusion criteria were considered for this review, as they were deemed most relevant to the research question at hand.

**Figure 1***Flowchart of studies selection process*

Note. From: Page et al. (2021)

### **Characteristics of the studies**

This section summarizes the characteristics of the 32 included studies, which represented 642,893 college students, as illustrated in Table 1. The studies used cross-sectional (n = 25) (Atienza-Carbonell et al., 2020; BlackDeer et al., 2021; Çelik et al., 2019; Duffy et al., 2019; Falade et al., 2020; Fonseca et al., 2019; Gan & Hue, 2019; Grace, 2020; Hersi et al., 2017; Hoyt et al., 2021; Kronfol et al., 2018; Lipson & Eisenberg, 2018; Mahroon et al., 2018; Messman & Leslie, 2019; Mirhosseini et al., 2021;





Moreira de Sousa et al., 2018; Moy & Ng, 2021; Pillay et al., 2020; Sa et al., 2020; Serpas, 2021; Tessema et al., 2019; van der Walt et al., 2020; Wang et al., 2019; Wilcox & Nordstokke, 2019; Zakeri et al., 2021), and longitudinal design ( $n = 7$ ) (Billingsley & Hurd, 2019; del Toro & Hughes, 2020; McLafferty et al., 2017; Moutinho et al., 2019; Silva et al., 2017; Song et al., 2020; Tran, 2020).

A total of 28 studies surveyed undergraduates (Atienza-Carbonell et al., 2020; Billingsley & Hurd, 2019; BlackDeer et al., 2021; Çelik et al., 2019; del Toro & Hughes, 2020; Duffy et al., 2019; Falade et al., 2020; Fonseca et al., 2019; Gan & Hue, 2019; Grace, 2020; Hersi et al., 2017; Hoyt et al., 2021; Kronfol et al., 2018; Mahroon et al., 2018; McLafferty et al., 2017; Mirhosseini et al., 2021; Moreira de Sousa et al., 2018; Moutinho et al., 2019; Sa et al., 2020; Pillay et al., 2020; Serpas, 2021; Silva et al., 2017; Song et al., 2020; Tessema et al., 2019; Tran, 2020; van der Walt et al., 2020; Wang et al., 2019; Wilcox & Nordstokke, 2019); with 12 of them focusing exclusively on medical students (Atienza-Carbonell et al., 2020; Kronfol et al., 2018; Silva et al., 2017; Moreira de Sousa et al., 2018; Mahroon et al., 2018; Gan & Hue, 2019; Tessema et al., 2019; Moutinho et al., 2019; Song et al., 2020; van der Walt et al., 2020; Falade et al., 2020; Mirhosseini et al., 2021). The others had undergraduate and graduate students as target population ( $n = 3$ ) (Lipson & Eisenberg, 2018; Messman & Leslie, 2019; Moy & Ng, 2021) and only one specifically evaluated doctoral students (Zakeri et al., 2021).

Almost all studies recruited participants in a single country, mostly in the United States, except one study, by Kronfol et al. (2018), which collected data from participants in three countries (Qatar, Lebanon, and the United States). The sample size of the studies ranged from 66 to 365,749 students. Only three studies examined exclusively minority students, including ethnic, racial, sexual and gender minorities (del Toro & Hughes, 2020; Serpas, 2021; Tran, 2020).

**Table 1***Characteristics of the included studies*

	Number of studies	Percentage (%)
Total number of studies	32	100%
cross-sectional	25	78%
longitudinal design	7	22%
Academic degree:		
Undergraduate and graduate	3	9%
doctoral students	1	3%
Sample size: ≤ 100	1	3%
≥ 101 – 500	14	44%
≥ 501 – 1000	9	28%
≥ 1001	8	25%
Region (Countries):	5	
South America (Brazil)	2	6%
Asia (Bahrain, China, Iran,	6	19%
USA and Canada	14	44%
Europe (Portugal, Spain, Turkey	5	16%
BDI and BDI-II	5	16%
CES-D	4	13%
DASS-21	5	16%
HADS	3	9%
PHQ-9		6%
SRQ-20	2	6%
USDI	2	6%
Others	8	25%

The studies measured depression, anxiety, and suicidal ideation jointly ( $n = 5$ ); depression and anxiety ( $n = 15$ ); only depression ( $n = 8$ ); only anxiety ( $n = 2$ ); or suicidal ideation (2). All the studies evaluated at least one sociocultural data, and 15 studies measured some academic factors. The publication period ranged from 2017 to 2021. Finally, all the included studies examined the relationship of at least one sociocultural or academic factor with depression, anxiety, or suicidal ideation, as detailed in Table 2.



**Table 2**

*Analysis of sociocultural and academic factors related to depression, anxiety and suicidal ideation in the included studies*

Studies	Associated sociocultural and/or academic factors	Mental health variable
Hersi et al. (2017)	Gender, economic status, interpersonal relationship	Anxiety and depression
Silva et al. (2017)	Financial stress, relationship patterns, academic preoccupation	Anxiety and depression
McLafferty et al. (2017)	Gender, sexual orientation, economic status	Anxiety, depression and suicidal ideation
Lipson et al. (2018)	Academic competition, pressure to excel in studies	Anxiety and depression
Kronfol et al. (2018)	Gender, economic status, housing situation, difficulty balancing academic and personal responsibilities	Anxiety and depression
Moreira de Sousa et al. (2018)	Academic performance	Anxiety and depression
Mahroon et al. (2018)	Gender, ethnicity, relationship with peers, year of study, social inequality, lack of access to resources, low academic motivation, dissatisfaction with the chosen career	Anxiety and depression
Billingsley et al. (2019)	Gender, economic status, involvement in academic activities	Depression
Gan et al. (2019)	Gender, ethnicity, status, economic condition	Anxiety and depression
Fonseca et al. (2019)	Academic performance	Depression
Tessema et al. (2019)	Gender, ethnicity, year of study, academic performance	Anxiety and depression
Wilcox (2019)	Academic performance	Anxiety and depression
Messman et al. (2019)	Gender, sexual orientation	Anxiety, depression and suicidal ideation
Moutinho et al. (2019)	Gender, economic status and year of study	Anxiety and depression
Çelik et al. (2019)	Economic status and academic performance	Depression
Duffy et al. (2019)	Gender	Suicidal ideation
Wang et al. (2019)	Gender	Anxiety, depression and suicidal ideation
Song et al. (2020)	Gender, sexual orientation	Depression
van der Walt et al. (2020)	Gender, sexual orientation	Anxiety and depression
Falade et al. (2020)	Gender, ethnicity, race, sexual orientation, economic status and academic performance	Anxiety and depression
del Toro & Hughes (2020)	Gender, economic status and academic performance	Depression

Studies	Associated sociocultural and/or academic factors	Mental health variable
Sa et al. (2020)	Gender, economic status and academic performance	Suicidal ideation
Pillay et al. (2020)	Gender	Depression
Grace (2020)	Gender, ethnicity, race, sexual orientation, economic status and academic performance	Depression
Atienza-Carbonell et al. (2020)	Gender and academic performance	Anxiety and depression
Tran (2020)	Gender, ethnicity, race	Anxiety, depression and suicidal ideation
Mirhosseini et al. (2021)	academic performance, semester level, interest in the area of study and topic of study	Depression
BlackDeer et al. (2021)	Gender, ethnicity and academic performance	Anxiety, depression and suicidal ideation
Hoyt et al. (2021)	Gender, ethnicity, sexual orientation, economic status	Anxiety
Moy & Ng (2021)	Ethnicity and academic degree	Anxiety and depression
Serpas (2021)	Gender, ethnicity, race, sexual orientation, economic status	Anxiety and depression
Zakeri et al. (2021)	Gender, race, sexual orientation, economic status	Anxiety

### *Risk of bias in studies*

Of the studies included in this systematic literature review, 31 were assessed as having a minimal risk of bias, with the majority meeting the validity criteria. The critical evaluation conducted by the Joanna Briggs Institute (Aromataris & Munn, 2020) revealed that only one study had a medium risk of bias. Despite the varying quality scores, all studies were included in the review to ensure a comprehensive overview of the available literature.

### *Results of individual studies*

#### Prevalence of depressive, anxiety and suicidal ideation

The results of the individual studies included indicate high prevalence rates for depression, anxiety, and suicidal ideation among college students. The prevalence of depression scores ranged from 10.8% (Falade et al., 2020) to 40% (Mahroon et al., 2018), while anxiety scores ranged from 15.9% (Kronfol et al., 2018) to 51.5% (Mahroon et al.,



2018). Suicidal ideation was found to be prevalent between 5.3% (Tran, 2020) and 31% (McLafferty et al., 2017).

### ***Sociocultural factors associated with depression, anxiety, or suicidal ideation***

Associations between sociocultural factors and depression, anxiety or suicidal ideation were identified in all studies. In most studies, women had higher levels of depression, anxiety and/or suicidal ideation, however, one study of Malaysian medical students reported that men had higher levels of anxiety and depression (Gan & Hue, 2019). Furthermore, one study by Çelik et al. (2019) found that there were no statistically significant differences in the levels of depressive symptoms between women and men students.

The studies have consistently shown a correlation between lower economic status and higher levels of mental health issues such as depression, anxiety, and/or suicidal ideation (Hersi et al., 2017; McLafferty et al., 2017; Kronfol et al., 2018; Moutinho et al., 2019; Çelik et al., 2019; Falade et al., 2020; Grace, 2020; Hoyt et al., 2021; Zakeri et al., 2021). Individuals from lower socio-economic backgrounds are often exposed to multiple stressors and challenges such as financial insecurity, limited access to quality healthcare and educational opportunities, all of which can negatively impact their mental health. The impact of poverty on mental health is further compounded by the stigma associated with being poor and the lack of resources available to address mental health issues in low-income communities.

Several studies investigated the relationship between gender diversity and sexual orientation with mental health outcomes such as depression, anxiety, and suicidal ideation (Duffy et al., 2019; Grace, 2020; Hoyt et al., 2021; McLafferty et al., 2017; Messman and Leslie, 2019; Serpas, 2021; Silva et al., 2017; van der Walt et al., 2020). The results of these studies consistently show that individuals who identify as gender and sexual minorities are more likely to experience these mental health problems than their cisgender and heterosexual peers. This is often attributed to the discrimination, stigma, and marginalization that these individuals face in their daily lives, which can significantly impact their mental health. Therefore, there is a need for increased support and resources

for these populations, as well as the need to address the root causes of discrimination and stigma in society.

Similarly, ethnicity and race have been examined in nine studies that investigated their relationship with mental health outcomes in college students from various countries such as Malaysia, China, Ethiopia, Nigeria, and the United States (BlackDeer et al., 2021; Falade et al., 2020; Gan & Hue, 2019; Grace, 2020; Hoyt et al., 2021; Serpas, 2021; Tessema et al., 2019; Tran, 2020; Wang et al., 2019). The findings suggest that racial and ethnic minority students are more likely to experience higher levels of mental health issues such as suicidal ideation, depression, and anxiety compared to White and non-minority students. However, it is important to note that this relationship between race and mental health outcomes is not universal, and in one case, no significant differences were found between ethnic and racial groups in terms of depressive symptoms (del Toro & Hughes, 2020). Therefore, there is a need to consider the role of race and ethnicity in the mental health of college students and address systemic factors that contribute to health disparities across different racial and ethnic groups. Overall, these studies highlight the importance of addressing discrimination and stigma in society and providing adequate support and resources for individuals from marginalized populations.

### ***Impact of academic factors on mental health***

Thirteen studies measured the impact of various academic factors on mental health problems, such as academic performance, current curricular year, motivation to enter the course, and academic success (Atienza-Carbonell et al., 2020; BlackDeer et al., 2021; Çelik et al., 2019; Falade et al., 2020; Fonseca et al., 2019; Lipson & Eisenberg, 2018; Mahroon et al., 2018; Mirhosseini et al., 2021; Moy & Ng, 2021; Sa et al., 2020; Silva et al., 2017; Wang et al., 2019; Wilcox & Nordstokke, 2019). Among these studies, Atienza-Carbonell et al. (2020) found that college students with lower academic performance reported higher levels of depression and anxiety. BlackDeer et al. (2021) found that first-year college students had higher levels of suicidal ideation compared to those in later years. Conversely, Çelik et al. (2019) found that students who were more motivated to enter their course of study reported lower levels of depression. These results demonstrate



a clear association between academic factors and mental health outcomes, indicating the need for further research to better understand the underlying mechanisms and develop effective interventions to support the mental health of college students.

### **Discussion**

This systematic review explored the interplay between sociocultural and academic factors and their implications on mental health outcomes - notably depression, anxiety, and suicidal ideation - in college students. Analyzing 32 studies involving 642,893 students, we discerned higher prevalence rates of these mental health issues in college students than in the general populace. These findings echo the World Health Organization's recent data (WHO, 2022) and are consistent with Ibrahim et al.'s (2013) systematic review. College life, characterized by unique stressors, such as adapting to novel environments and academic pressures, likely contributes to this elevation in mental health problems (Cuijpers et al., 2019; del Toro & Hughes, 2020; Evans-Lacko & Thornicroft, 2019; Karyotaki et al., 2020).

Sociocultural factors emerged as potent predictors of mental health outcomes in our review. Specifically, women, sexual, ethnic, and racial minority groups, and economically disadvantaged individuals exhibited heightened risk profiles. These disparities can be attributed to economic inequalities, experiences of discrimination, and various forms of violence that minority groups often face (Baére & Zanello, 2020; Salami et al., 2021; Thomas, 2017; Keels et al., 2017). The literature reinforces that structurally marginalized groups are more susceptible to emotional distress due to systemic biases (Billingsley & Hurd, 2019; Okoro et al., 2022; Queiroz & Santos, 2016; Zanello et al., 2015).

It's noteworthy that the WHO in the most recent World Report on Mental Health published in 2022, reports that countries with higher income inequalities and social polarization have a higher prevalence of mental health issues, including schizophrenia, depression, anxiety, and substance use (WHO, 2022). These findings highlight the significance of sociocultural factors in shaping college students' mental health and the

need for further research to understand their complex interplay. Investing in policies that promote social equity is crucial in addressing the issue of mental health.

On the academic front, elements like academic performance, the year of study, and motivation were linked to mental health outcomes. Studies (Barker et al., 2018; Bruffaerts et al., 2018; Evans-Lacko & Thornicroft, 2019; Silva et al., 2017; Sheldon et al., 2021) have evidenced this connection, prompting reflections on how academic life might act as a buffer or stressor in the nexus between societal factors and mental health.

However, the study presents some limitations, including the use of only self-report measures to assess mental health problems and the wide variation in the assessment instruments used in the studies. Additionally, most of the studies had a cross-sectional design and were restricted to quantitative studies, making it impossible to perform an in-depth analysis of college students' perceptions of mental health determinants.

The results of this study have important implications for practice, policy, and future research. The findings emphasize the need to address social and cultural inequalities and to provide support to high-risk groups, such as women, people belonging to sexual, racial, and ethnic minority groups, and those with low self-reported income. Moreover, the study highlights the importance of evaluating academic life as a moderator of the relationship between social factors and mental health. Finally, the limitations of the study suggest that future research should consider the use of mixed methods and explore the subjective experiences and perceptions of college students in relation to mental health determinants.

### **Conclusion**

In this systematic review, we've synthesized existing literature to shine a spotlight on the nuanced interplay between sociocultural and academic factors that affect college students' mental health. The findings emphasize the importance of comprehending these overlapping dimensions to design effective interventions. Furthermore, the review identifies key risk factors within both the academic realm and broader societal context that profoundly influence mental well-being.





One standout revelation from our analysis is the damaging influence of social and economic disparities. These disparities heighten the risk of mental health challenges among students. With this in mind, policies geared toward reducing such systemic inequalities become vital in ensuring mental health parity among students. Integrating social determinants into mental health strategies is imperative. Resources should be strategically funneled to cater to the unique needs of economically disadvantaged student groups.

Against a landscape characterized by escalating income inequality and acute social fragmentation, the data presented herein serve as a clarion call: the intensifying mental health crisis within academic institutions is poised for exacerbation if not proactively mitigated. Therefore, it behooves policymakers, academic administrators, and healthcare practitioners to prioritize social determinants as integral components of a holistic strategy aimed at ameliorating student mental health. By honing in on these sociocultural factors, we can create preventive and responsive mental health programs that truly cater to the needs of the most vulnerable student populations.

#### ***Implications for Practice and recommendations for Future Research***

As we reflect on the practical implications of this study and chart out recommendations for subsequent research, our work emerges as a fulcrum for ongoing discussions and transformative interventions in student mental health. In the immediate term, it's paramount for campuses to mandate mental health screenings. These should prioritize the identification and subsequent support of at-risk student groups. Screenings must be designed with a broad lens, capturing the diverse challenges that various student segments encounter. Central to this initiative is the requirement for campus mental health services to enlist specialized professionals. These counselors should possess expertise in catering to the unique mental health intricacies of marginalized student communities.

In tandem, educational institutions must critically evaluate and revamp conventional academic frameworks to prioritize student mental well-being. Consider introducing flexible academic curricula, inclusive of provisions like adaptable deadlines or earmarked mental health breaks, to lessen the inherent pressures of academia.

Enhancing this effort, faculty should undergo holistic training in both diversity and mental health awareness. This strategic training will equip instructors with the skills to identify and support an array of mental health challenges that surface within our ever-diversifying student communities.

Shifting focus to potential research horizons, a mixed-methods research paradigm is advocated. This dual approach ensures a deeper grasp of student mental health by marrying qualitative narratives with quantitative metrics. There's also a pressing need for longitudinal studies, which hold the potential to shed light on the enduring effects of sociocultural and academic influences on student mental health progressions. Moreover, it's crucial to subject any newly introduced mental health policies or interventions to consistent and rigorous evaluation.

In summary, it is imperative that academic institutions adopt a multi-faceted approach to mental health that is sensitive to social determinants and inclusive in scope. The findings suggest urging educational strategists, university leaders, and education professionals to implement far-reaching and enduring reforms. Such proactive measures will ensure we are adeptly addressing the diverse and evolving mental health prerequisites of our student body.



## References

- Alonso, J., Mortier, P., Auerbach, R. P., Bruffaerts, R., Vilagut, G., Cuijpers, P., Fentampere, K., Ebert, D. D., Ennis, E., Gutiérrez-garcía, R. A., Green, J. G., Hasking, P., Lochner, C., Nock, M. K., Pinder-amaker, S., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2018). Severe role impairment associated with mental disorders: Results of the WHO World Mental Health Surveys International College Student Project. *Depression & Anxiety*, 1-13. <https://doi.org/10.1002/da.22778>
- American College Health Association. (2023). *American College Health Association-National College Health Assessment III: Undergraduate Student Reference Group Data Report Spring 2023*. Silver Spring
- Aromataris, E., & Munn, Z. (2020). JBI Manual for Evidence Synthesis. *JBI*. Available from. <https://doi.org/10.46658/JBIMES-20-01>
- Asante, K. O., & Andoh-Arthur, J. (2015). Prevalence and determinants of depressive symptoms among university students in Ghana. *Journal of Affective Disorders*, 171, 161-166. <https://doi.org/10.1016/j.jad.2014.09.025>
- Atienza-Carbonell, B., & Balanzá-Martínez, V. (2020). Prevalence of depressive symptoms and suicidal ideation among Spanish medical students. *Actas españolas de psiquiatria*, 48(4), 154-162.
- Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D. D., Green, J. G., Hasking, P., Murray, E., Nock, M. K., Pinder-Amaker, S., Sampson, N. A., Stein, D. J., Vilagut, G., Zaslavsky, A. M., & Kessler, R. C. (2018). WHO world mental health surveys international college student project: Prevalence and distribution of mental disorders. *Journal of Abnormal Psychology*, 127(7), 623-638. <https://doi.org/10.1037/abn0000362>
- Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., et al. WHO WMH-ICS Collaborators (2019). Mental disorder comorbidity and suicidal thoughts and behaviors in the World Health Organization World Mental Health Surveys International College Student initiative. *International journal of methods in psychiatric research*, 28(2), e1752. <https://doi.org/10.1002/mpr.1752>
- Backhaus, I., Varela, A. R., Khoo, S., Siefke, K., Crozier, A., Begotaraj, E., Fischer, F., Wiehn, J., Lanning, B. A., Lin, P-H., Jang, S., Monteiro, L. Z., Al-Shamli, A., La Torre, G. & Kawachi, I. (2020) Associations Between Social Capital and Depressive Symptoms Among College Students in 12 Countries: Results of a Cross-National Study. *Frontiers in Psychology*, 11(644), 1-11. <https://doi.org/10.3389/fpsyg.2020.00644>
- Baére, F., & Zanella, V. (2020). Suicidal behavior in women of diverse sexualities: silenced

- violence. *Psicologia clínica*, 32(2), 335-353. <http://dx.doi.org/10.33208/PC1980-5438v0032n02A07>
- Barker, E.T., Howard, A.L., Villemare-Krajden, R., & Galambos, N. L. (2018). The Rise and Fall of Depressive Symptoms and Academic Stress in Two Samples of University Students. *Journal Youth and Adolescence*, 47, 1252-1266. <https://doi.org/10.1007/s10964-018-0822-9>
- Billingsley, J. T., & Hurd, N. M. (2019). Discrimination, mental health and academic performance among underrepresented college students: the role of extracurricular activities at predominantly white institutions. *Social Psychology of Education*, 22(2), 421-446. <https://doi.org/10.1007/s11218-019-09484-8>
- BlackDeer, A. A., Wolf, D. A. P. S., Maguin, E., & Beeler-Stinn, S. (2021). Depression and anxiety among college students: Understanding the impact on grade average and differences in gender and ethnicity. *Journal of American College Health*. <https://doi.org/10.1080/07448481.2021.1920954>
- Bruffaerts, R., Mortier, P., Kiekens, G., Auerbach, R. P., Cuijpers, P., Demyttenaere, K., Green, J. G., Nock, M. K., & Kessler, R. C. (2018). Mental health problems in college freshmen: Prevalence and academic functioning. *Journal of Affective Disorders*, 225, 97-103. <https://doi.org/10.1016/j.jad.2017.07.044>
- Çelik, N., Ceylan, B., Ünsal, A., & Çağan, Ö. (2019). Depression in health college students: relationship factors and sleep quality. *Psychology, Health and Medicine*, 24(5), 625-630. <https://doi.org/10.1080/13548506.2018.1546881>
- Cuijpers, P., Auerbach, R. P., Benjet, C., Bruffaerts, R., Ebert, D., Karyotaki, E., & Kessler, R. C. (2019). The World Health Organization World Mental Health International College Student initiative: An overview. *International Journal of Methods in Psychiatric Research*, 28(2), 1-16. <https://doi.org/10.1002/mpr.1761>
- del Toro, J., & Hughes, D. (2020). Trajectories of Discrimination across the College Years: Associations with Academic, Psychological, and Physical Adjustment Outcomes. *Journal of Youth and Adolescence*, 49, 772-789. <https://doi.org/10.1007/s10964-019-01147-3>
- Duffy, M. E., Henkel, K. E., & Joiner, T. E. (2019). Prevalence of Self-Injurious Thoughts and Behaviors in Transgender Individuals with Eating Disorders: A National Study. *Journal of Adolescent Health*, 64(4), 461-466. <https://doi.org/10.1016/j.jadohealth.2018.07.0166>
- Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and Correlates of Depression, Anxiety, and Suicidality Among University Students.



*American Journal of Orthopsychiatry*, 77(4), 534-542. <https://doi.org/10.1037/0002-9432.77.4.534>

- Eisenberg, D., Hunt, J., & Speer, N. (2013). Mental Health in American Colleges and Universities Variation Across Student Subgroups and Across Campuses. *The Journal of Nervous and Mental Disease*, 201(1), 60-67. <https://doi.org/10.1097/NMD.0b013e31827ab077>
- Evans-Lacko, S. E., & Thornicroft, G. (2019). Viewpoint: WHO World Mental Health Surveys International College Student Initiative: Implementation issues in low - and middle - income countries. *International Journal of Methods in Psychiatric Research*, 28(2), 1-5. <https://doi.org/10.1002/mpr.1756>
- Falade, J., Oyeboji, A. H., Babatola, A. O., Falade, O. O., & Olumuyiwa, T. O. (2020). Prevalence and correlates of psychiatric morbidity, comorbid anxiety and depression among medical students in public and private tertiary institutions in a nigerian state: A cross-sectional analytical study. *Pan African Medical Journal*, 37, 1-15. <https://doi.org/10.11604/pamj.2020.37.53.24994>
- Fawzy, M., & Hamed, S. A. (2017). Prevalence of psychological stress, depression and anxiety among medical students in Egypt. *Psychiatry Research*, 255, 186-194. <https://doi.org/10.1016/j.psychres.2017.05.027>
- Fonseca, J. R. F., Calache, A. L. S. C., Santos, M. R., Silva, R. M., & Moretto, S. A. (2019). Association of stress factors and depressive symptoms with the academic performance of nursing students. *Revista da Escola de Enfermagem da USP*, 53, 1-9. <https://doi.org/10.1590/S1980-220X2018030403530>
- Gan, G. G., & Hue, Y. L. (2019). Anxiety, depression and quality of life of medical students in Malaysia. *Medical Journal of Malaysia*, 74(1).
- Grace, M. K. (2020). Status Variation in Anticipatory Stressors and Their Associations with Depressive Symptoms. *Journal of Health and Social Behavior*, 61(2), 170-189. <https://doi.org/10.1177/0022146520921375>
- Hersi, L., Tesfay, K., Gesesew, H., Krah, W., Ereg, D., & Tesfaye, M. (2017). Mental distress and associated factors among undergraduate students at the University of Hargeisa, Somaliland: A cross-sectional study. *International Journal of Mental Health Systems*, 11(39), 1-8. <https://doi.org/10.1186/s13033-017-0146-2>
- Hetolang, L. T., & Amone-P'Olak, K. (2018). The associations between stressful life events and depression among students in a university in Botswana. *South African Journal of Psychology*, 48(2), 255-267. <https://doi.org/10.1177/0081246317711793>
- Hoyt, L. T., Cohen, A. K., Dull, B., Maker Castro, E., & Yazdani, N. (2021). "Constant Stress

- Has Become the New Normal”: Stress and Anxiety Inequalities Among U.S. College Students in the Time of COVID-19. *Journal of Adolescent Health*, 68(2), 270-276. <https://doi.org/10.1016/j.jadohealth.2020.10.030>
- Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. *Journal of psychiatric research*, 47(3), 391-400. <https://doi.org/10.1016/j.jpsychires.2012.11.015>
- Ishii, T., Tachikawa, H., Shiratori, Y., Hori, T., & Aiba, M. (2018). What kinds of factors affect the academic outcomes of university students with mental disorders? A retrospective study based on *medical records*. *Asian Journal of Psychiatry*, 32, 67-72. <https://doi.org/10.1016/j.ajp.2017.11.017>
- Karyotaki, E., Cuijpers, P., Albor, Y., Alonso, J., Auerbach, R. P., Bantjes, J., Bruffaerts, R., Ebert, D. D., Hasking, P., Kiekens, G., Lee, S., McLafferty, M., Mak, A., Mortier, P., Sampson, N. A., Stein, D. J., Vilagut, G. & Kessler, R. C. (2020). Sources of Stress and Their Associations with Mental Disorders Among College Students: Results of the World Health Organization World Mental Health Surveys International College Student Initiative. *Frontiers in Psychology*, 11(1759), 1-11. <https://doi.org/10.3389/fpsyg.2020.01759>
- Keels, M., Durkee, M., & Hope, E. (2017). The Psychological and Academic Costs of School-Based Racial and Ethnic Microaggressions. *American Educational Research Journal*, 54(6), 1316-1344. <https://doi.org/10.3102/0002831217722120>
- Kronfol, Z., Khalifa, B., Khoury, B., Omar, O., Daouk, S., deWitt, J. P., ElAzab, N., & Eisenberg, D. (2018). Selected psychiatric problems among college students in two Arab countries comparison with the USA. *BMC Psychiatry*, 18(147), 1-9. <https://doi.org/10.1186/s12888-018-1718-7>
- Lipson, S. K., & Eisenberg, D. (2018). Mental health and academic attitudes and expectations in university populations: results from the healthy minds study. *Journal of Mental Health*, 27(3), 205–213. <https://doi.org/10.1080/09638237.2017.1417567>
- Mahroon, Z. A., Borgan, S. M., Kamel, C., Maddison, W., Royston, M., & Donnellan, C. (2018). Factors Associated with Depression and Anxiety Symptoms Among Medical Students in Bahrain. *Academic Psychiatry*, 42(1), 31-40. <https://doi.org/10.1007/s40596-017-0733-1>
- McLafferty, M., Lapsley, C. R., Ennis, E., Armour, C., Murphy, S., Bunting, B. P., Bjourson, A. J., Murray, E. K., & O’Neill, S. M. (2017). Mental health, behavioural problems and treatment seeking among students commencing university in Northern Ireland. *Plos One*, 12(12), 1-14. <https://doi.org/10.1371/journal.pone.0188785>



- Messman, J. B., & Leslie, L. A. (2019). Transgender college students: Academic resilience and striving to cope in the face of marginalized health. *Journal of American College Health*, 67(2), 161-173. <https://doi.org/10.1080/07448481.2018.1465060>
- Mirhosseini, S., Bazghaleh, M., Basirinezhad, M. H., Abbasi, A., & Ebrahimi, H. (2021). The relationship between depression and academic satisfaction in medical science students. *Journal of Mental Health Training, Education and Practice*, 16(2), 99-111. <https://doi.org/10.1108/JMHTEP-03-2020-0017>
- Moreira de Sousa, J., Moreira, C. A., & Telles-Correia, D. (2018). Anxiety, Depression and Academic Performance A Study Amongst Portuguese Medical Students Versus Non-Medical Students. *Acta Medica Portuguesa*, 31(9), 454-462. <https://doi.org/10.20344/amp.9996>
- Mortier, P., Cuijpers, P., Kiekens, G., Auerbach, R. P., Demyttenaere, K., Green, J. G., Kessler, R. C., Nock, M. K., & Bruffaerts, R. (2018). The prevalence of suicidal thoughts and behaviours among college students: A meta-analysis. *Psychological Medicine*, 48(4), 554-565. <https://doi.org/10.1017/S0033291717002215>
- Moutinho, I. L. D., Lucchetti, A. L. G., Ezequiel, O. S., & Lucchetti, G. (2019). Mental Health and Quality of Life of Brazilian Medical Students: Incidence, Prevalence, and Associated Factors Within Two Years of Follow-up. *Psychiatry Research*, 274, 306-312. <https://doi.org/10.1016/j.psychres.2019.02.041>
- Moy, F. M., & Ng, Y. H. (2021). Perception towards E-learning and COVID-19 on the mental health status of university students in Malaysia. *Science Progress*, 104(3), 1-18.
- Okoro, C., Owojori, O. M., & Umeokafor, N. (2022). The Developmental Trajectory of a Decade of Research on Mental Health and Well-Being amongst Graduate Students: A Bibliometric Analysis. *International Journal of Environmental Research and Public Health*, 19(4929). <https://doi.org/10.3390/ijerph19094929>
- Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan — A Web and Mobile App For Systematic Reviews. *Systematic Reviews*, 5(210). <https://doi.org/10.1186/s13643-016-0384-4>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron I., Hoffmann, T. C., Mulrow, C. D., et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, 372(71). <https://doi.org/10.1136/bmj.n71> [10.1136/bmj.n7](https://doi.org/10.1136/bmj.n7)
- Pillay, A. L., Thwala, J. D., & Pillay, I. (2020). Depressive symptoms in first year students at a rural South African University. *Journal of Affective Disorders*, 265, 579-582. <https://doi.org/10.1016/j.jad.2019.11.094>
- Queiroz, D. M., & Santos, C. M. (2016). As mulheres negras brasileiras e o acesso à educação

- superior. *Revista da FAEEBA-Educação e Contemporaneidade*, 25(45). 71-87
- Rentería, R., Benjet, C., Gutiérrez-García, R. A., Abrego-Ramírez, A., Albor, Y. Borges, G. et al. (2021). Prevalence of 12-month mental and substance use disorders in sexual minority college students in Mexico. *Social Psychiatry and Psychiatric Epidemiology*, 56, 247-257. <https://doi.org/10.1007/s00127-020-01943-4>
- Sa, J., Choe, S., Cho, B. Y., Chaput, J. P., Lee, J., & Hwang, S. (2020). Sex and racial/ethnic differences in suicidal consideration and suicide attempts among US college students, 2011-2015. *American Journal of Health Behavior*, 44(2), 214-231. <https://doi.org/10.5993/AJHB.44.2.9>
- Salami, T., Lawson, E., & Metzger, I. W. (2021). The impact of microaggressions on Black college students' worry about their future employment: The moderating role of social support and academic achievement. *Cultural Diversity and Ethnic Minority Psychology*, 27(2), 245-255. <https://doi.org/10.1037/cdp0000340>
- Serpas, D. G. (2021). Everyday Discrimination and Mental Health Symptoms among Hispanic and Non-Hispanic Students of Color Attending a Hispanic Serving Institution. *Health Equity*, 5(1), 316-323. <https://doi.org/10.1089/heq.2020.0095>
- Sheldon, E., Simmonds-Buckley, M., Bone, C., Mascarenhas, T., Chan, N., Wincott, M., et al. (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. ISSN 0165-0327. <https://doi.org/10.1016/j.jad.2021.03.054>
- Silva, V., Costa, P., Pereira, I., Faria, R., Salgueira, A. P., Costa, M. J., Sousa, N., Cerqueira, J. J., & Morgado, P. (2017). Depression in medical students: insights from a longitudinal study. *BMC Medical Education*, 17(184), 1-9. <https://doi.org/10.1186/s12909-017-1006-0>
- Song, Y. Q., Liu, Z. R., Chen, H. G., Guo, Q., & Huang, Y. Q. (2020). Incidence and Risk Factors of Depressive Symptoms in Chinese College Students. *Neuropsychiatric Disease and Treatment*, 16(0), 2449-2457. <https://doi.org/10.2147/NDT.S264775>
- Tessema, T. T., Gebremariam, T. A., Abebe, E. A., & Gebre, R. D. (2019). The Prevalence and Factors Associated with Mental Distress among College Students in Southern Ethiopia: A Cross-Sectional Study. *Ethiopian Journal of Health Sciences*, 9(3), 353-360. <https://doi.org/10.4314/ejhs.v29i3.7>
- Thomas, D. (2017). Expectations of educational success as a mediator between racial discrimination and college GPA. *The New School Psychology Bulletin*, 14, 28-36.
- Tran, A. G. T. T. (2020). Looking forward to student-athlete mental health: Racial/ethnic trends from 2010 to 2015. *Journal of American College Health*, 69(8), 942-950.





<https://doi.org/10.1080/07448481.2020.1725018>

- van der Walt, S., Mabaso, W. S., Davids, E. L., & de Vries, P. J. (2020). The burden of depression and anxiety among medical students in South Africa: A cross-sectional survey at the University of Cape Town. *South African Medical Journal*, 110(1), 69-76. <https://doi.org/10.7196/SAMJ.2020.v110i1.14151>
- Wang, Y. R., Sun, J. W., Lin, P. Z., Zhang, H. H., Mu, G. X., & Cao, F. L. (2019). Suicidality among young adults Unique and cumulative roles of 14 different adverse childhood experiences. *Child Abuse & Neglect*, 98. <https://doi.org/10.1016/j.chiabu.2019.104183>
- Wilcox, G., & Nordstokke, D. (2019). Predictors of University Student Satisfaction with Life, Academic Self-Efficacy, and Achievement in the First Year. *Canadian Journal of Higher Education*, 49(1), 104-124. <https://doi.org/10.7202/1060826ar>
- Wilks, C. R., Auerbach, R. P., Alonso, J., Benjet, C., Bruffaerts, R., & Cuijpers, P. (2020). The importance of physical and mental health in explaining health-related academic role impairment among college students. *Journal of Psychiatric Research*, 123, 54-61.
- World Health Organization (2022). World mental health report: transforming mental health for all. Geneva: *World Health Organization*, CC BY-NC-SA 3.0 IGO
- Zakeri, M., de La Cruz, A., Wallace, D., & Sansgiry, S. S. (2021). General Anxiety, Academic Distress, and Family Distress Among Doctor of Pharmacy Students. *American Journal of Pharmaceutical Education*, 85(10), 1031-1036. <https://doi.org/10.5688/ajpe8522>
- Zanello, V., Fiuza, G., & Costa, H. S. (2015). Saúde mental e gênero: facetas gendradas do sofrimento psíquico. *Fractal, Revista de Psicologia*, 27(3). <https://doi.org/10.1590/1984-0292/1483>

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