



Assessing the Mental Health and Perceived Support Needs of College Students: A Mixed Method Approach

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Orcid ID: 0009-0007-7392-8626

DOI: 10.31080/ASMS.2024.08.1943

Received: September 18, 2024

Published: October 10, 2024

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Abstract

In Guyana, mental health issues are highly prevalent, underscoring the importance of identifying college students at a higher risk during their academic years. This research aimed to assess the mental health of undergraduate students at the University of Guyana School of Medicine utilizing the Depression, Anxiety and Stress (DASS-21) scale. Additionally, students were encouraged to provide insights into their support needs to enhance psychological well-being. A convenience sample of 198 students, aged 18-35, completed an online survey between October and December 2022, with 79.3% being female. The findings revealed a substantial proportion of students displaying symptoms of anxiety (70%), depression (68%) and stress (50%). Female students exhibited a significantly higher prevalence of depression (Chi-square test). Students in their early academic years experienced elevated rates of depression, anxiety and stress. Approximately 64% of participants expressed a need for support to enhance their well-being. Notably, those seeking professional assistance had significantly higher levels of depression, while those requesting academic guidance reported higher levels of anxiety and stress. Thematic analysis identified four key themes explaining reasons for seeking support: sense of inadequacy, feeling overwhelmed, experiencing high family pressure, and depression. The study recommended tailored support programs addressing specific mental health issues to promote student well-being.

Keywords: Mental Health; College Students; Support Needs; Depression

Introduction

Mental health issues have become the leading cause of disability and a significant global public health concern [1,2]. The World Health Organization (WHO) defines mental health as an essential component of overall well-being. Sound mental well-being empowers individuals to unlock their capabilities, manage everyday pressures effectively, engage in productive endeavors, and make valuable contributions to their communities [3].

Key indicators of mental health challenges the presence of depression, anxiety and stress [4]. The American Psychological Association describes anxiety and depression as emotional responses that share a very similar set of symptoms, including disrupted sleep, fatigue, muscle tension, and irritability. Among the symptoms of depression, it is common to find a disinterest in daily activities, notable changes in weight, decreased energy, reduced focus, feelings of worthlessness or guilt, that if not addressed promptly, thoughts of death or suicide [5].

The link between major depressive disorder and suicide attempts or ideation is well established, with suicidal thoughts and behaviors commonly occurring during depressive episodes and an estimated suicide risk of approximately 15%. Additionally, epidemiological studies have shown that individuals with major depressive disorders who also suffer from comorbid anxiety disorders are significant predictors of suicide attempts among those with depression [6].

College students are particularly susceptible to stress, anxiety, and depression, which can result in psychological distress and hinder academic performance [6]. Several factors have been identified as causes of stress during college life, such as academic pressures, limited leisure time, apprehensions about parental expectations, the transition to unfamiliar environments with a high level of competitiveness, and biological factors like age and gender, particularly females playing a role, as do financial burdens [5,7,8].

On a global scale, numerous studies have identified a substantial prevalence of depression, anxiety, and stress among college students [9-15]. In a systematic review and meta-analyses conducted by Li and colleagues in 2022 [1], the study provided an overview of the present condition and related factors concerning depression and anxiety symptoms in college students across the globe. The research revealed that there is a significant worldwide prevalence of depression and anxiety symptoms among college students, estimated to range from approximately 33.6% to 39%. Notably, medical college students exhibited the highest prevalence of depression symptoms, over 40%.

Medical college students are more vulnerable to anxiety, stress, and depression compared to their counterparts in other academic disciplines due to a combination of factors. The demanding and competitive nature of medical education, characterized by a rigorous curriculum and intense academic pressure, significantly contributes to their mental health challenges [16-18]. The emotional toll of clinical training, exposure to suffering, and the responsibility of life-and-death decisions add to this burden [19,20]. Financial strain from high educational costs and limited work-life balance further exacerbates their mental well-being. Perfectionism, fear of failure, social isolation, and the lack of effective coping strategies also play significant roles [21].

In Guyana, mental health issues are highly prevalent in both the general population and specific subgroups. Mental, neurological, substance use, and self-harm disorders (MNSS) account for over a quarter of the disease burden between the ages of 10 and 40, making them the leading health burden during this period. Until age 5, most of the MNSS burden is attributed to epilepsy (53%) and autism (40%). From ages 5 to 15, conduct disorders, anxiety disorders, and headaches each contribute 16% to the MNSS burden. By age 20, a consistent pattern emerges: common disorders such as anxiety, depression, self-harm, and somatic symptom disorder account for 53% of the burden (with suicide comprising over a third of the MNSS burden between ages 15 and 35), substance use disorders contribute 18% (largely due to alcohol at 14%), headaches 13%, and severe mental illnesses (schizophrenia and bipolar disorder) 5% [22].

Guyana, an upper-middle-income Caribbean nation located on the northeast coast of South America, has a diverse population of around 750,000, with major ethnic groups including Indo-Guyanese (40%), Afro-Guyanese (29%), Amerindian (11%), and those of mixed ethnicity (20%). Since gaining independence in 1966, the country has struggled with persistently high suicide rates, consistently ranking among the top ten globally since 2000 and holding the highest rate in the Americas. Despite the government's implementation of a National Suicide Prevention Plan in 2014, these efforts have had limited success. In 2019, Guyana's suicide rate was 40.9 per 100,000—the highest in two decades and the second highest in the world. Inadequate resources, competing priorities, and a lack of local research are likely contributing factors [6,23].

Despite the ongoing mental health crisis in Guyana, there is a significant gap in research specifically focusing on college students. Current data on mental health issues in Guyana largely overlooks the college student population. Without specific research, there is a lack of understanding about the prevalence and nature of mental health problems among this group, which impedes the development of effective support services and policies.

The University of Guyana (UG), established in 1963, is the country's primary public higher education institution and plays a crucial role in Guyana's educational and research landscape. UG serves as the central hub for tertiary education in the country, offering a wide range of undergraduate and postgraduate

programs across various disciplines. With a diverse student body that reflects Guyana’s multicultural society, UG is uniquely positioned to study and address mental health issues specific to its students. Research on mental health within this population is vital, as it can lead to targeted interventions and improved support services that enhance academic success and overall well-being. As the only public university in Guyana, UG’s efforts to address these challenges not only impact its students but also contribute to national development and societal health.

Considering these factors, this preliminary mixed-method study aims to ascertain the prevalence of anxiety, depression, and stress among undergraduate students at the University of Guyana School of Medicine, as well as their perceived support needs. Addressing this research gap is crucial for developing a comprehensive understanding of mental health challenges within this population and for implementing effective support strategies. This initial investigation will provide valuable insights that could inform future, more extensive research and help in tailoring interventions to better support students’ mental health and academic success.

Materials and Methods

Study design

This study employed a mixed-methods research design, combining quantitative and qualitative approaches. The quantitative phase involved the administration of a survey questionnaire to assess the mental health indicators of college students, while the qualitative phase involved open-ended questions to explore their perceived support needs. This approach allowed for a comprehensive understanding of the mental health issues and support requirements of college students.

Study setting and participants

The study took place at the University of Guyana School of Medicine during the 2022-2023 academic year, targeting all undergraduate students registered in one of the four programs offered by the School of Medicine. The total population consisted of 416 students, all of whom were contacted via email and asked to participate. Of these, 210 consented and responded to the questionnaire, but 12 were excluded due to incomplete responses. Ultimately, a convenience sample of 198 students participated, yielding a response rate of 47.6%. The participants were distributed across the following programs

School of Medicine Programs	Total Students	Sample (%)
Bachelor of Medicine, Bachelor of Surgery (MBBS)	218	89 (40.8%)
Bachelor of Science (Medical Rehabilitation) [Physiotherapy/Occupational Therapy]	87	57 (65.5%)
Bachelor of Science (Medical Rehabilitation) [Speech Language Therapy and Audiology]	57	27 (47.4%)
Bachelor of Science (Optometry)	54	25 (46.3%)
Total	416	198 (47.6%)

Table a

Efforts were made to ensure the sample included students from various programs and years of study to capture a diverse range of experiences. However, the response rate varied by program, with physiotherapy students being more likely to participate and MBBS students less so.

Quantitative data collection

The questionnaire was administered online to the participants between October and December 2022. Participants were provided with clear instructions on how to complete the questionnaire, and their responses were anonymized to maintain confidentiality. They could not answer the questionnaire until their consent was obtained. The first section of the questionnaire collected demographic information, including age, sex, marital status, region of residence, academic program, and year of study.

The second section of the questionnaire included the Depression, Anxiety, and Stress Scale (DASS-21), a reliable and validated instrument commonly used to measure symptoms of depression, anxiety, and stress. The DASS-21, developed by Lovidond and Lovidond in 1995, is a shorter version of the original DASS and consists of 21 items, with seven items for each of the three subscales: depression (items 3, 5, 10, 13, 16, 17, and 21), anxiety (items 2, 4, 7, 9, 15, 19, and 20), and stress (items 1, 6, 8, 11, 12, 14, and 18) [24].

Students were asked to rate how much each statement applied to them over the past week using a 4-point Likert scale, ranging from 0 (did not apply to me at all) to 3 (applied to me most of the time). The total score for each subscale ranged from 0 to 21. Usual cutoff points were used for each subscale, and the total scores were multiplied by 2 to match the original scoring of the DASS-42 scale: depression (0-9, no depression; 10-13, mild depression; 14-20, moderate depression; 21-27, severe depression; > 27, extremely severe depression), anxiety (0-7, no anxiety; 8-9, mild anxiety; 10-14, moderate anxiety; 15-19, severe anxiety; > 19, extremely severe anxiety), stress (0-14, no stress; 15-18, mild stress; 19-25, moderate stress; 26-33, severe stress; > 33, extremely severe stress) [25].

Qualitative data collection

The third section of the questionnaire aimed to explore the perceived support needs of the students. Specifically, students were asked if they would like to receive support to improve their mental well-being. If they answered “yes”, they were free to describe the type of support needed and the reasons for it. Additionally, they were asked to elaborate on how confident they felt in their ability to focus on school subjects, participate in class discussions, keep academic work organized, or manage other important activities or projects they had been involved with recently.

Data analysis

- **Quantitative data analysis:** The raw data collected were cleaned, coded into a dataset, and analyzed using the Statistical Package for Social Sciences (SPSS, version 21 for Windows, IBM Corp., Chicago, IL, USA). Twelve incomplete questionnaires were discarded. Descriptive statistics were conducted to determine the magnitude of the problem through frequency distributions, means, and standard deviations. Scores for depression, anxiety, and stress were calculated, and the classification of symptom presence was performed using the cut-off points described above. The chi-square test was used to identify factors associated with the presence and severity of symptoms of depression, anxiety, and stress. A p-value of less than 0.05 was considered statistically significant. No multivariate analysis was performed because only two factors showed significant associations in the bivariate analysis. For the purpose of presentation, the symptom scores were

grouped into three categories: depression (0-9, no symptoms; 10-20, mild to moderate; >20, severe or extremely severe), anxiety (0-7, no symptoms; 8-14, mild to moderate; >14, severe or extremely severe), and stress (0-14, no symptoms; 15-25, mild to moderate; >25, severe or extremely severe). The significance of the associations was consistent. The Cronbach’s alpha values for the DASS-Depression subscale, DASS-Anxiety subscale, and DASS-Stress subscale were 0.900, 0.845, and 0.866, respectively, with an overall Cronbach’s alpha for the DASS-21 of 0.947.

- **Qualitative data analysis:** The data from the open-ended questions were analyzed using inductive thematic analysis, following the guidelines of Braun and Clarke [26]. Initially, the responses were read and re-read multiple times to ensure deep familiarity with the content, allowing for the identification of patterns and themes within the qualitative data. This iterative process allowed for the identification of recurring themes, patterns, and concepts related to the perceived support needs of the students. Next, these emerging themes were systematically coded, with each code representing a distinct aspect of the data. The coding process was flexible and data-driven, meaning that the codes were refined and adjusted as new patterns were identified. The themes were then categorized into broader, overarching categories to capture the relationships between different aspects of the students’ experiences.
- Once the themes were identified and grouped, they were interpreted in the context of the research objectives to uncover deeper insights into the participants’ experiences, needs, and perceptions of support. This interpretation involved connecting the identified themes to existing literature, theories and frameworks on student support, mental health, and well-being, ensuring that the analysis was grounded in a broader academic context. Throughout the analysis, the researchers also remained attentive to any deviant cases or contradictions within the data, which were explored in detail to ensure that the analysis captured the full range of participants’ perspectives. The resulting thematic map provided insights into the participants’ perceived support needs, illustrating both common and unique experiences among the students in the sample.

- Integration of quantitative and qualitative findings:** The quantitative and qualitative findings were integrated during the interpretation phase to provide a more comprehensive understanding of the mental health and perceived support needs of the students in the study. The qualitative findings enriched the quantitative results by offering contextual insights into the students’ experiences. However, it is important to acknowledge that the findings may be limited by the convenience sampling method used. While the qualitative data provided depth to the understanding of certain patterns observed in the quantitative results, these conclusions may not be generalizable to the broader student population. Instead, they offer valuable preliminary insights that could guide further research with more representative sampling.
- Ethical considerations:** Ethical approval was obtained from the ministry of health institutional review board (IRB). Informed consent was obtained from all participants, and their confidentiality and anonymity were ensured throughout the study. Participants were provided with information about available mental health resources and were given the option to seek support if needed.

Results

A total of 198 undergraduate students participated in the study. The majority were aged 21-25 years (60.6%), followed by 22.2% who were between 18 and 20 years, and only 17.2% were older than 25 years. Among the participants, 79.3% were female. In terms of marital status, most participants were single (91.4%). The largest proportion of participants resided in semi-urban areas (44.9%). Regarding academic years, the second year had the highest representation (28.8%), followed closely by first-year students (23.7%), third-year students (22.2%), fourth-year students (20.7%), and fifth-year students (4.5%).

Table 1 provides an overview of the symptoms of depression, anxiety, and stress experienced by the students, as measured by the DASS-21 scale. The findings reveal that a significant proportion of students experienced symptoms of anxiety (70%), depression (68%), and stress (50%).

DASS -21	Frequency	Percent
Symptoms of Depression		
No Symptoms (0 - 9)	63	31.8
Mild (10 - 13)	30	15.2
Moderate (14 - 20)	62	31.3
Severe (21 - 27)	21	10.6
Extremely Severe (> 27)	22	11.1
Symptoms of Anxiety		
No Symptoms (0 - 7)	59	29.8
Mild (8 - 9)	21	10.6
Moderate (10 - 14)	33	16.7
Severe (15 - 19)	37	18.7
Extremely Severe (> 19)	48	24.2
Symptoms of Stress		
No Symptoms (0 - 14)	99	50.0
Mild (15 - 18)	26	13.1
Moderate (19 - 25)	41	20.7
Severe (26 - 33)	19	9.6
Extremely Severe (> 33)	13	6.6

Table 1: Symptoms of Depression, Anxiety, and Stress of the Students (DASS-21).

It is noticeable from table 2 that 45.5% of our participants presented symptoms of depression, anxiety, and stress simultaneously, according to the DASS-21. Additionally, 21.2% experienced symptoms of two subscales, with depression and anxiety being the most common combination in 17.2% of the students.

Presence of Symptoms	Frequency	Percent
No Symptoms	49	24.75
Depression, Anxiety and Stress	90	45.45
Depression and Anxiety	34	17.17
Depression and Stress	1	0.51
Anxiety and Stress	7	3.54
Depression	9	4.55
Anxiety	7	3.54
Stress	1	0.51
Total	198	100

Table 2: Simultaneous presence of Symptoms related to Depression, Anxiety, and Stress.

The data presented in table 3 examines the presence of symptoms of depression among the study population, analyzing the relationship between depression scores, sex, and academic year. These findings suggest that sex and academic year are significantly associated with different depression scores among the participants

($p < 0.05$). Female students exhibited higher rates of severe to extremely severe depression compared to males. Moreover, the proportion of students reporting no depression symptoms tended to increase as they progressed from the first to the fifth year of studies.

Factors	Symptoms of depression						Chi-square p-value
	No symptoms		Mild to moderate		Severe to extremely severe		
	No.	%	No.	%	No.	%	
Sex							
Male	14	37.8	22	59.5	1	2.7	0.008
Female	49	30.4	70	43.5	42	26.1	
Academic Year							
First	13	27.7	23	48.9	11	23.4	0.010
Second	19	33.3	28	49.1	10	17.5	
Third	8	18.2	25	56.8	11	25.0	
Fourth	15	36.6	15	36.6	11	26.8	
Fifth	8	88.9	1	11.1	0	0.0	

Table 3: Symptoms of Depression related to sex and academic year.

Table 4 illustrates the presence of symptoms of anxiety of the study participants in relation to their academic year. The findings indicate that anxiety scores differ among students in different

academic years, with higher scores observed during the initial years of study. The chi-square test revealed a significant association ($p = 0.002$).

Academic Year	Symptoms of Anxiety						Chi-square p-value
	No Symptoms		Mild to Moderate		Severe to Extremely Severe		
	No.	%	No.	%	No.	%	
First	9	19.1	15	31.9	23	48.9	0.002
Second	18	31.6	14	24.6	25	43.9	
Third	9	20.5	11	25.0	24	54.5	
Fourth	15	36.6	14	34.1	12	29.3	
Fifth	8	88.9	0	0.0	1	11.1	

Table 4: Symptoms of Anxiety related to academic year.

The findings suggest no substantial variation in stress scores among students across different academic years. (Chi-square $p = 0.202$).

Approximately 64% of participants expressed a need for support to enhance their well-being. Different types of support

were required depending on the specific mental health issue being experienced. Participants needing professional assistance had significantly higher levels of depression, while those requesting academic guidance had significantly higher anxiety and stress levels (Figure 1).



Figure 1. Word Cloud based on the students’ support needs.

The qualitative aspect of the study, reflected in figure 2, provided more profound insights into the reasons for seeking support. Through inductive thematic analysis, four key themes emerged: a sense of inadequacy, feeling overwhelmed, experiencing high family pressure, and depression.

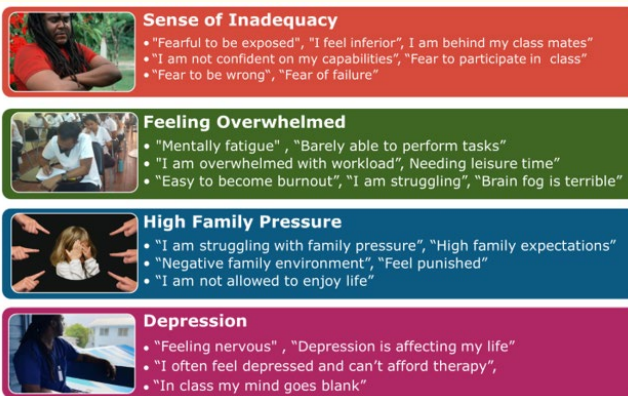


Figure 2. Main themes emerged from inductive thematic analysis.

In conclusion, this study sheds light on the frequency and varying severity of symptoms of anxiety, depression, and stress among the studied students. The findings highlight the need for tailored mental health support interventions, considering factors such as sex and academic year.

Discussion

The findings highlight a notable prevalence of symptoms of depression (68%), anxiety (70%), and stress (50%) among

undergraduates at the University of Guyana School of Medicine. These elevated rates are not surprising, given the widespread impact of mental health issues across the lifespan in Guyana [6,22,23].

Compared to other studies that used the DASS-21 scale among college students, the present research revealed a significantly higher prevalence of psychological distress [7,12,16,27]. Ramón-Arbués., *et al.* study among college students in Spain [5] found that stress was more common than anxiety and depression, with prevalence rates of 34.5%, 23.6%, and 18.4%, respectively. In contrast, Yu Y., *et al.* [2] study in China reported similar rates of depression and anxiety at 34.5% and 33.4%, but only 12% of students exhibit stress symptoms. Bangladesh [13] study showed higher rates of mental health symptoms than our findings, with about 90% of students experiencing symptoms of depression, anxiety, and stress ranging from mild to extremely severe.

A pivotal study for comparison is the systematic review and meta-analysis by Li and colleagues in 2022 [1]. This research provides an overview of the global prevalence and contributing factors of depression and anxiety symptoms in college students. It found a global prevalence of these symptoms ranging from 33.6% to 39%, considerably lower than the rates reported in the current study. These findings have important implications for policy and practice in higher education, especially within the School of Medicine.

Medical college students are particularly prone to stress, anxiety, and depression, as supported by multiple studies showing high rates of mental health issues during medical training globally [10,16-20,28,29]. A systematic review and meta-analysis [3] of 195 studies involving 129,123 medical students from 47 countries found that 27.2% displayed symptoms of depression, and 11% reported having suicidal thoughts. Contributing factors include long work and study hours, challenging learning environments, insufficient sleep, and disruptions to daily life.

The study findings suggest that interventions should target the specific challenges encountered by female students and those in their early years of study. Female students exhibited a higher rate of severe to extremely severe depression compared to males, consistent with previous research indicating that women are

more susceptible to depression [30-33]. The study also found that students in different academic years experienced varying levels of depression, anxiety, and stress, with those in their earlier years facing more pronounced psychosocial distress. Importantly, academic progression alone may not effectively predict stress levels, highlighting the need to address the distinct challenges faced by students at different stages of their academic journey.

First-year students often start college while dealing with heightened anxiety and stress, which may result from facing uncertainties and the anticipation of transitioning to a new life phase, including possibly moving away from home [34]. It is also important to acknowledge the high prevalence of mental health issues among adolescents and young adults in Guyana [22,23]. Additionally, the study found that 64% of participants needed support to improve their well-being. The type of support required varied with the mental health issue being experienced. Participants needing professional help showed higher levels of depression, whereas those seeking academic guidance reported increased anxiety and stress.

The qualitative findings of the study provide important insights into the specific support needs of participants. Identified themes include feelings of inadequacy, being overwhelmed, high family pressure, and depression, all of which reveal the complexity of students' mental health challenges. These themes reflect the various psychosocial, academic, and social stressors impacting students, highlighting the need for thorough, personalized support interventions.

A central takeaway from this study is the necessity for a comprehensive approach to student well-being. Mental health support should be embedded in all areas of university life, including academic, social, and emotional aspects. A supportive environment can be established by fostering collaboration among academic advisors, mental health professionals, faculty, and student organizations to help students effectively manage their challenges.

The study's limitations, including convenience sampling and focusing on a specific school within the College of Medical Sciences, point to opportunities for further research. Expanding the study to include a larger and more diverse sample across different faculties or colleges within the university could offer a more comprehensive

view of the mental health landscape among college students in Guyana. Additionally, longitudinal studies could examine changes in mental health indicators over time and assess the impact of various interventions on students' well-being.

As higher education institutions navigate the challenges of a post-pandemic world, this research highlights the critical need to cultivate a campus environment that prioritizes mental health and well-being. Universities that commit to strong mental health support systems are likely to benefit from improved student retention, academic performance, and overall student experience. The authors should discuss the results in relation to previous studies and the initial hypotheses, interpreting the findings within a broader context. Additionally, future research directions should be identified.

Conclusions

In conclusion, these findings offer important contributions to mental health research in higher education in Guyana. By highlighting the frequency of symptoms of depression, anxiety and stress, as well as the associations with sex and academic year, and by identifying the specific support needs expressed by the students, the study provides a guide for designing effective interventions. Developing and implementing targeted support programs that address specific mental health issues will be essential for promoting student well-being. These programs should take into account the identified themes such as feelings of inadequacy, being overwhelmed, high family pressure, and depression. In the context of the ongoing effects of the pandemic, this research emphasizes the need to prioritize college students' mental health and highlights the proactive role universities can play in driving positive change.

Author Contributions

All four authors (APR, MOP, NSS, and MSV) have contributed substantially to the conception design of the work and the acquisition, analysis, and interpretation of data for the job. All authors reviewed the final submission piece. All authors agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any.

Funding

This research received no external funding.

Institutional Review Board Statement

Approval to conduct the study was granted by the IRB of the Ministry of Public Health of Guyana (New Protocol No: 070/2022).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Data is available on reasonable request from the corresponding Author.

Acknowledgments

The authors sincerely thank the students who participated in this study, especially Jamain Hatton, who kindly provided the pictures in Figure 3.

Conflicts of Interest

The authors declare no conflicts of Interests.

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