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The Mental Maze: A Mixed-methods Approach to Understanding Undergraduate Student Mental Health at a South African University

Chanté Johannes[1,*], Solomon. D. Danga[1] and Nicolette. V. Roman[1]

[1]*Centre for Interdisciplinary Studies of Children, Families, and Society, University of the Western Cape, Cape Town, South Africa*

Abstract:

Introduction: Depression, anxiety, and stress have been identified as global public health concerns among young adults, such as undergraduate university students. Limited studies have explored mental health through a mixed-methodological approach. Therefore, this study aimed to determine and explore the prevalence of mental health challenges among undergraduate students at a South African university.

Methods: Using the sequential explanatory design, quantitative data were conveniently collected through the Depression, Anxiety, and Stress Scale (DASS-21) (n = 534), and analysed using SPSS v.29. Semi-structured interviews commenced with a convenient sample of undergraduate students (n = 18) and thematically analysed using ATLAS.ti v.8.

Results: Results revealed a high prevalence of extremely severe anxiety among undergraduate students; 41.5% of males and 39.9% of females were affected. On-campus students reported higher anxiety levels (42.6%). Third- and fourth-year students exhibited the highest rates of extremely severe anxiety at 60% and 65.5%, respectively. The prevalence of anxiety was the highest among the Dentistry (60.4%), Law (59.6%), and Education (46.4%) faculties. Qualitatively, six key themes emerged: perceptions of mental health, coping mechanisms, sources of support, barriers to seeking help, stigma and awareness, and strategies for mental health maintenance.

Discussion: While females reported slightly higher levels of depression and stress, males exhibited a higher prevalence of extremely severe anxiety. Relationship status, living arrangements, academic year, and faculty affiliation significantly influenced mental health outcomes.

Conclusion: University policies must integrate tailored strategies to foster inclusive, sustainable mental health support systems, promoting Sustainable Development Goal 3 (good health and well-being).

Keywords: Mental health, University students, Undergraduate Student Mental Health, Depression, Anxiety, Stress.

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*Address correspondence to this author at the Centre for Interdisciplinary Studies of Children, Families, and Society, University of the Western Cape, Cape Town, South Africa; E-mail: chjohannes@uwc.ac.za

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1. INTRODUCTION

The World Health Organisation (WHO) considers the prevention and treatment of mental health disorders as a fundamental aspect of human health [1]. Yet, mental health classifications, such as depression, anxiety, and stress, have become a public health issue globally due to their widespread prevalence and significant impact on quality of life. Consequently, these mental health disorders account fora bout one-third of the global disease burden, contributing to approximately 8 million deaths annually [2,

3]. According to a previous study discussing the results reported by the WHO, depression affects around 300 million individuals globally, making it the leading cause of disability worldwide [4]. Specifically, depression, anxiety, and stress are considered important indicators for mental health, which, if left untreated, may negatively influence an individual's well-being [5]. University students have been identified as a particularly vulnerable group for adverse mental health outcomes [6]. Specifically, the mental health status of university students in South Africa has become an increasing concern, with a reported prevalence of mental distress at 53.3% among this population [7].

Previous research has reported that most mental health problems appear by early adulthood; however, young adults, such as undergraduate university students, rarely get the relevant support [8]. The journey of undergraduate university students is usually characterised as a stressful experience coupled with high levels of anxiety [9]. A South African study involving 3,092 undergraduate students revealed that the prevalence and severity of depression escalated between 2016 and 2019 [10]. Similarly, another South African study found that 24.7% of students experienced depressive disorder and 20.8% reported an anxiety disorder, which negatively influenced student wellness [11]. Additional studies have reported similar results, with anxiety diagnosed in between 12% and 43% of university students [12, 13]. However, the prevalence of mental health symptoms not only impacts well-being, but also the academic journey of a student [14]. High rates of common mental disorders among university students have been reported to be associated with academic failure and attrition in South Africa [15]. For instance, a recent study demonstrated that low mood, negative cognitions, and low self-esteem were reported by over 20% of students, negatively affecting their social, interpersonal, and daily functions [14]. It was observed that the presence of these symptoms had a negative impact on academic performance. Specifically, 26.3% of participants reported that distracting thoughts disrupted their study time, 24.2% felt overwhelmed by their studies, 21.5% indicated that their mood interfered with completing assigned tasks, and 19.7% had difficulty finishing their study-related work [14]. These signs and symptoms have been observed to increase the risk of academic failure, which can further aggravate feelings of depression, worthlessness, and low self-esteem, and increase suicide risk [14]. A plausible contributor to the mental health challenges experienced by students may be the broader structural and socio-economic pressures associated with studying at a historically disadvantaged institution (HDI).

In the South African context, an HDI is considered a university that was established during the apartheid era to cater to Africans and other non-white populations [16]. Today, HDIs are still characterised by low funding, are situated in low-income communities, and typically have insufficient facilities and infrastructure [17]. Students attending an HDI come from various sociocultural backgrounds, lifestyles, and environmental influences, creating a diverse demographic [18]. Therefore, it is plausible that students exhibit unique patterns of mental health due to these backgrounds [11, 16]. Therefore, understanding these influences is essential for contextualising this study and enhancing mental health among undergraduate university students.

Attention needs to be paid to supporting the psychological well-being of young adults throughout their journey at university in South Africa [11]. Although previous studies have statistically proven that mental health among students is prevalent [19-21], few have taken into account the effect of contextual factors, such as HDIs, on the mental health status of students. Studying the prevalence of mental health issues is a common methodological approach; however, using interviews separately to explore mental health offers deeper, contextual insights. These approaches, while valuable, provide only a snapshot through a single research design. In contrast, a mixed-methods approach allows for a more comprehensive understanding by integrating both quantitative breadth and qualitative depth [22, 23]. Previous studies, in the field of student mental health, have predominantly relied on either quantitative methods to assess prevalence and correlations [19-21], or qualitative approaches to explore personal experiences and contextual factors [22]. However, few studies have integrated these methodologies to capture both breadth and depth in the same study. The use of a mixed-methodological approach in this study has addressed this gap by combining the strengths of both paradigms. The quantitative component allowed for the measurement of mental health and the extent of challenges within a larger student population, while the qualitative component enabled deeper exploration of students' lived experiences. Thus, this dual methodology has provided a more holistic understanding of undergraduate mental health, particularly within the South African higher education context. By using a mixed-methodology design, student-tailored interventions could be designed and implemented to enhance the mental health status among undergraduate university students in South Africa. Therefore, this study aimed to determine and explore the prevalence of mental health challenges among undergraduate students at a South African university.

2. MATERIALS AND METHODS

2.1. Study Design and Philosophical Assumptions

This research adopted a pragmatic philosophical perspective [24], which advocates for the use of diverse methodologies to achieve a richer comprehension of the research problem [25]. Grounded in practicality, pragmatism promotes the examination of research questions through an interconnected, meaningful lens rather than in isolation [24, 25]. This approach was especially pertinent to the present study, as relying exclusively on questionnaires could constrain participants' ability to articulate their experiences, emotions, and viewpoints in depth. By supplementing quantitative

surveys with qualitative interviews, the study sought to capture a more holistic portrayal of students' attitudes, behaviours, and perspectives. The interplay of methods facilitated a layered investigation of mental health [26]. Consequently, a mixed-methods design was implemented, merging quantitative and qualitative approaches to address the research questions, aims, and objectives [23]. More specifically, an explanatory sequential design was followed, wherein the qualitative phase (phase 2) expanded upon insights derived from the quantitative phase (phase 1). Data integration occurred across both phases, with quantitative findings shaping the focus and direction of the qualitative exploration. Additionally, this study followed the Sex and Gender Equity in Research (SAGER) guidelines [27]. A summary of the methods employed in this study is presented in Table **1**.

2.2. Ethical Considerations

All participants provided written consent to take part in this study. Ethics approval was obtained from the Humanities and Social Sciences research ethics committee at a university in the Western Cape province of Cape Town, South Africa (reference number HS21/10/24) prior to the commencement of the research.

3. RESULTS

3.1. Demographic Information

Table **2** presents the demographic details of the study participants. In the quantitative stage, the study included 534 undergraduate students, with 53.6% identifying as female. Participants' ages ranged from 18 to 42 years, with a mean age of 21.11 years (SD = 2.71). The majority of students were first-year undergraduates (n = 206, 38.6%) and were enrolled in the Faculty of Community and Health Sciences (n = 143, 26.8%). Most participants were single (n = 298, 5.8%) and lived off campus (n = 495, 89.9%). In the qualitative stage, 18 students participated, including 12 females (66.7%) and 6 males (33.3%). Their ages ranged from 19 to 24 years, with a mean age of 21 years (SD = 1.37). Many of these students were enrolled in the Faculty of Community and Health Sciences (n = 8, 44.4%) and were in their second (n = 6, 33.3%) or third (n = 6, 33.3%) year of study. A large proportion of the participants were single (n =14, 77.8%) and lived off campus (n =15, 83.3%).

3.2. Quantitative Results

3.2.1. Prevalence of Mental Health

Table **3** shows the prevalence of mental health categories according to the demographic information of students. The survey findings indicated a high prevalence of extremely severe anxiety among undergraduate students, with 41.5% of males and 39.9% of females reporting this level of anxiety. Overall, the prevalence of extremely severe anxiety among the undergraduate student sample was 40.6%. Variations were observed based on campus residence, where students living on campus reported a prevalence of 42.6% for extremely severe anxiety and 55.5% for normal stress levels. Among students living off campus, the prevalence of extremely severe anxiety was slightly lower at 40.4%, with 41.7% reporting normal stress levels. In terms of relationship status, students who reported being in a relationship showed a 44.5% prevalence of extremely severe anxiety, whereas those not in a relationship recorded a 47% prevalence of normal stress. When disaggregated by year of study, the prevalence of normal stress was highest among 1st (46.6%) and 2nd year students (52%), while 3rd (60%) and 4th year students (65.5%) recorded the highest prevalence of extremely severe anxiety. Among 5th-year students, the prevalence of normal stress was 66.7%, alongside 44.4% reporting normal levels of depression and 44% reporting severe anxiety. Faculty-level analysis showed that the highest prevalence of extremely severe anxiety was among students in Dentistry (60.4%), Law (59.6%), and Education (46.4%). In contrast, a higher prevalence of normal stress was reported in the faculties of Natural Sciences (53.7%), Community and Health Sciences (52.4%), Economic and Management Sciences (47.0%), and Arts and Humanities (40.3%). Despite this, Community and Health Sciences also recorded a 32.2% prevalence of extremely severe anxiety, indicating notable variation within faculty-specific outcomes.

3.2.2. Differences in Mental Health Disorders

Table **4** shows the differences between mental health categories and demographic information of students. Male students reported slightly higher mean scores for depression (M = 8.50, SD = 6.39) and stress (M = 8.94, SD = 6.10) compared to female students (depression: M = 8.29, SD = 6.24; stress: M = 9.18, SD = 5.54), although females had a marginally higher mean anxiety score (M = 8.42, SD = 5.46) compared to males (M = 8.26, SD = 6.09). These differences in mean scores were, however, not statistically significant, as indicated in Table **3** (depression: t = 0.397, p = 0.005; anxiety: t = -0.33, p = 0.005; stress: t = -0.47, p = 0.005). Relationship status showed that students in a relationship had lower mean scores for depression (M = 8.15, SD = 6.42), anxiety (M = 8.17, SD = 5.90), and stress (M = 8.85, SD = 5.90), than those not in a relationship (depression: M = 8.69, SD = 6.15; anxiety: M = 8.57, SD = 5.58; stress: M = 9.36, SD = 5.69), with t-values (depression: t = 0.975, p = 0.005; anxiety: t = 0.805, p = 0.005; stress: t = 1.009, p = 0.005) indicating these differences to not be statistically significant. Furthermore, students living on campus reported lower mean scores for depression (M = 7.07, SD = 6.21), anxiety (M = 7.74, SD = 5.93), and stress (M = 7.76, SD = 5.93), compared to those living off campus (depression: M = 8.54, SD = 6.30; anxiety: M = 8.41, SD = 5.74; stress: M = 9.22, SD = 5.78). The t-values for anxiety (t = -0.815; p = 0.005) suggested non-significant differences, as well as the values for depression (t = -1.618; p = 0.005) and stress (t = -1.755; p = 0.005).

Table 1. Sequential explanatory mixed methodological process.

Stage	Method	Design	Setting and Participants	Instrument	Procedure	Analysis
1	Quantitative	Quantitative cross-sectional study design through the application of an online and hard-copy self-administered questionnaire to determine the prevalence of mental health disorders among undergraduate university students at a HDI in the Western Cape province of South Africa.	The study focused on undergraduate students from a university in South Africa's Western Cape province. Participants were selected through convenience sampling, drawn from a student population of approximately 19,000. Using Raosoft, Inc. (version 7, 2004) software, a power analysis of 0.95 (95%) was conducted to determine the required sample size, yielding a target of 375 undergraduate students. Inclusion criteria required participants to (1) be at least 18 years old, (2) be registered as full-time students, and (3) provide written consent. Conversely, individuals were excluded if they (1) were under 18 years of age, (2) were enrolled only in part-time or semester courses, or (3) did not provide written consent.	The questionnaire comprised two main sections: (1) demographic details (including sex, age, faculty, year of study, and residence) and (2) mental health assessment. Psychological distress was evaluated using the Depression, Anxiety, and Stress Scale (DASS-21), which measures three subscales, depression, anxiety, and stress, based on participants' experiences in the preceding week. Responses were recorded on a 4-point Likert scale ranging from 0 ("did not apply to me") to 3 ("applied to me very much or most of the time") [28]. While the DASS-21 provided insights into the prevalence of these mental health concerns among undergraduate students, it was not used for clinical diagnostic purposes [29, 30]. The scale demonstrated strong reliability, with Cronbach's alpha coefficients of 0.909 for depression, 0.856 for anxiety, and 0.870 for stress.	The online survey was developed using Google Forms following approval from the host university. Between September and November 2022, the questionnaire link was disseminated to full-time undergraduate students through the university's official email system. The invitation email outlined the voluntary nature of participation, with informed consent presented on the introductory page of the digital form. Participant anonymity was strictly maintained, as no personally identifiable data were collected. Submission of responses implied consent, while non-participants were redirected to an exit page with appreciation for their consideration. The online component yielded 189 complete responses. To enhance participation rates, 450 paper-based questionnaires were administered in high-footfall campus locations, resulting in 362 returned copies. After excluding 15 incomplete or non-consenting submissions, 347 valid hard-copy responses remained. Following duplicate removal, the combined dataset comprised 534 responses from both digital and physical collection methods [31].	The Statistical Package for Social Sciences (Version 28.0) (Chicago, IL, USA) was utilised for data analysis. Data were collected, coded, and cleaned for errors by applying the double-entry method within Microsoft Excel (version 16, 2019). For the double-entry method, two separate data-entry teams were assigned to input data into Excel spreadsheets. Upon completion, the spreadsheets were cross-checked, and discrepancies were resolved to ensure data accuracy. The sample characteristics were analysed using frequencies and percentages, as well as means and standard deviations for quantitative data. Independent samples t-tests were used to determine differences in mental health variables between groups. This test is appropriate for use when the independent variable has two categories and differences are being tested. One-way analysis of variance (ANOVA) was used to test differences between multiple groups when there were more than two categories. In this case, the variables were faculty and year of study.
2	Qualitative	Exploratory qualitative design using semi-structured interviews.	Eighteen (18) undergraduate students were recruited from the same university where the quantitative study was conducted.	The interview schedule was developed based on the quantitative findings and included open-ended questions focusing on mental health (*e.g.*, "How would you describe mental health? What do you understand by mental health?")	In-depth, semi-structured interviews were conducted individually in English language using Google Meet from July to August 2023. Each session lasted approximately 60 minutes and was facilitated by the lead researcher, who guided discussions using insights from existing literature and quantitative findings. Prior to commencement, participants provided informed consent, which included authorization for audio recording. All interviews were digitally recorded and subsequently transcribed word-for-word. Thematic saturation was achieved by the eighteenth interview, as subsequent discussions yielded no additional novel themes. To ensure accuracy and	The study employed reflexive thematic analysis to identify patterns in the interview data [32], using an inductive approach that allowed themes to emerge organically from the dataset [33]. Transcripts were analyzed using ATLAS.ti v8 software with pseudonyms protecting participant anonymity, following a four-phase thematic development process [34]; initialisation involved close reading of transcripts to identify meaning units and create initial codes; construction grouped related codes into provisional themes; rectification refined these themes to ensure alignment with study objectives; and finalisation produced clear thematic statements that were reviewed by co-authors until consensus was reached [35].

(Table 1) contd.....

Stage	Method	Design	Setting and Participants	Instrument	Procedure	Analysis
					participant validation, finalised transcripts were shared with interviewees *via* email for review. Three follow-up reminders were sent to confirm receipt and approval of transcripts before proceeding with data analysis.	To enhance the credibility of the qualitative findings, peer debriefing took place throughout the analysis process, involving independent coding by two researchers on a subset of transcripts. Coding differences were discussed until consensus was reached, strengthening inter-rater reliability. Thematic analysis was conducted using ATLAS.ti to ensure systematic data management and traceability. Additionally, reflexive journaling was used to monitor researcher bias and maintain transparency throughout the analysis process. This systematic approach ensured methodological rigor while maintaining fidelity to participants' experiences throughout the analytical process.
Data integration	Data integration occurred during the interpretation and reporting stages using a narrative approach [35]. In this form of integration, the results from both quantitative and qualitative phases are reported in a single narrative, with each set of findings presented separately [36, 37]. This approach enhances understanding by offering a comprehensive and cohesive view of the phenomenon under investigation, allowing for the mental health experiences of undergraduate students to be interpreted from multiple angles.					

Table 2. Demographic information of participants.

Demographic	Subcategory	Quantitative N (%)	Qualitative N (%)
Age		**21.11 (SD = 2.71)**	**21.00 (SD = 1.37)**
Sex	Male	248 (46.4)	6 (33.3)
	Female	286 (53.6)	12 (66.7)
Campus residence	Lives on campus	54 (10.1)	3 (16.7)
	Lives off campus	495 (89.9)	15 (83.3)
Relationship status	In a relationship	236 (44.2)	4 (22.2)
	Not in a relationship	298 (55.8)	14 (77.8)
Year of study	1	206 (38.6)	2 (11.1)
	2	150 (28.1)	6 (33.3)
	3	105 (19.7)	6 (33.3)
	4	64 (12.0)	4 (22.2)
	5	9 (1.7)	0 (0)
Faculty	Community and Health Sciences	143 (26.8)	8 (44.4)
	Education	83 (15.5)	3 (16.7)
	Arts	72 (13.5)	2 (11.1)
	Economic and Management Sciences	69 (12.9)	3 (16.7)
	Natural Sciences	67 (12.5)	1 (5.6)
	Law	52 (9.7)	1 (5.6)
	Dentistry	48 (9.0)	0 (0)

Note: SD = Standard deviation.

Table 3. Prevalence of mental health disorders according to demographic information of students.

Demographic Component	Subcategory	Mental Health Category N (%)														
		Depression					Anxiety					Stress				
		Normal	Mild	Moderate	Severe	Extremely Severe	Normal	Mild	Moderate	Severe	Extremely Severe	Normal	Mild	Moderate	Severe	Extremely Severe
Sex	Males	80 (32.3)	19 (7.7)	56 (22.6)	36 (14.5)	57 (23.0)	68 (27.4)	13 (5.2)	39 (15.7)	25 (10.1)	103 (41.5)	113 (45.6)	23 (9.3)	41 (16.5)	44 (17.7)	27 (10.9)
	Females	98 (34.3)	30 (10.5)	58 (20.3)	33 (11.5)	67 (23.4)	62 (21.7)	21 (7.3)	55 (19.2)	34 (11.9)	114 (39.9)	117 (40.9)	45 (15.7)	48 (16.8)	38 (13.3)	38 (13.3)
	Full sample	178 (33.3)	49 (9.2)	114 (21.3)	69 (12.9)	124 (23.2)	130 (24.3)	34 (6.4)	94 (17.6)	59 (11.0)	217 (40.6)	230 (43.1)	68 (12.7)	89 (16.7)	82 (15.4)	65 (12.2)
Campus residence	Living on campus	22 (40.7)	6 (11.1)	11 (20.4)	4 (7.4)	11 (20.4)	18 (33.33)	2 (3.7)	5 (9.3)	6 (11.1)	23 (42.6)	30 (55.6)	2 (3.7)	10 (18.5)	5 (9.3)	7 (13.0)
	Living off campus	156 (32.5)	43 (9.0)	103 (21.5)	65 (13.5)	113 (23.5)	112 (23.3)	32 (6.7)	89 (18.5)	53 (11.0)	194 (40.4)	200 (41.7)	66 (13.8)	79 (16.5)	77 (16.0)	58 (12.1)
Relationship status	In a relationship	70 (29.7)	21 (8.9)	51 (21.6)	36 (15.3)	58 (24.6)	55 (23.3)	9 (3.8)	40 (16.9)	27 (11.4)	105 (44.5)	90 (38.1)	32 (13.6)	44 (18.6)	45 (19.1)	25 (10.6)
	Not in a relationship	108 (36.2)	28 (9.4)	63 (21.1)	33 (11.1)	66 (22.1)	75 (25.2)	25 (8.4)	54 (18.1)	32 (10.7)	112 (37.6)	140 (47.0)	36 (12.1)	45 (15.1)	37 (12.4)	40 (13.4)
Year of Study	1st	82 (39.8)	22 (10.7)	44 (21.4)	16 (7.8)	42 (20.4)	54 (26.2)	20 (9.7)	42 (20.4)	22 (10.7)	68 (33.0)	96 (46.6)	34 (16.5)	32 (15.5)	22 (10.7)	22 (10.7)
	2nd	54 (36.0)	19 (12.7)	31 (20.7)	16 (10.7)	30 (20.0)	44 (29.3)	10 (6.7)	35 (23.3)	17 (11.3)	44 (29.3)	78 (52.0)	15 (10.0)	23 (15.3)	18 (12.0)	16 (10.7)
	3rd	25 (23.8)	3 (2.9)	26 (24.8)	19 (18.1)	32 (30.5)	20 (19.0)	4 (3.8)	7 (6.7)	11 (10.5)	63 (60.0)	33 (31.4)	10 (9.5)	16 (15.2)	26 (24.8)	20 (19.0)
	4th	13 (20.3)	4 (6.3)	10 (15.6)	17 (26.6)	20 (31.3)	9 (14.1)	(0.0)	8 (12.5)	5 (7.8)	42 (65.5)	17 (26.6)	8 (12.5)	16 (25.0)	16 (25.0)	7 (10.9)
	5th	4 (44.4)	1 (11.1)	3 (33.3)	1 (11.1)	0 (0.0)	3 (33.3)	(0.0)	2 (22.2)	4 (44.4)	0 (0.0)	6 (66.7)	1 (11.1)	2 (22.2)	0 (0.0)	0 (0.0)
Faculty	Arts and Humanities	20 (27.8)	6 (8.3)	19 (26.4)	14 (19.4)	13 (18.1)	16 (22.2)	7 (9.7)	19 (26.4)	5 (6.9)	25 (34.7)	29 (40.3)	8 (11.1)	16 (22.2)	12 (16.7)	7 (9.7)
	Community and Health Sciences	68 (47.6)	13 (9.1)	25 (17.5)	9 (6.3)	28 (19.6)	44 (30.8)	12 (8.4)	24 (16.8)	17 (11.9)	46 (32.2)	75 (52.4)	16 (11.2)	22 (15.4)	13 (9.1)	17 (11.9)
	Dentistry	7 (14.6)	2 (4.2)	15 (31.3)	12 (25.0)	12 (25.0)	6 (12.5)	(0.0)	6 (12.5)	7 (14.6)	29 (60.4)	9 (18.8)	8 (16.7)	14 (29.2)	13 (27.1)	4 (8.3)
	Economic and Management Sciences	30 (36.1)	10 (12.0)	18 (21.7)	8 (9.6)	17 (20.5)	19 (22.9)	5 (6.0)	17 (20.5)	11 (13.3)	31 (37.3)	39 (47.0)	14 (16.9)	12 (14.5)	11 (13.3)	7 (8.4)
	Education	19 (27.5)	5 (7.2)	13 (18.8)	14 (20.3)	18 (26.1)	15 (21.7)	4 (5.8)	8 (11.6)	10 (14.5)	32 (46.4)	26 (37.7)	8 (11.6)	13 (18.8)	12 (17.4)	10 (14.5)
	Law	10 (19.2)	4 (7.7)	11 (21.2)	7 (13.5)	20 (38.5)	9 (17.3)	(0.0)	8 (15.4)	4 (7.7)	31 (59.6)	16 (30.8)	6 (11.5)	8 (15.4)	13 (25.0)	9 (17.3)
	Natural Sciences	24 (35.8)	9 (13.4)	13 (19.4)	5 (7.5)	16 (23.9)	21 (31.3)	6 (9.0)	12 (17.9)	5 (7.5)	23 (34.3)	36 (53.7)	8 (11.9)	4 (6.0)	8 (11.9)	11 (16.4)

Table 4. Differences between mental health disorders and demographic information of students.

Demographic Component	Subcategory	Mental Health Category: M (SD)		
		Depression	Anxiety	Stress
Sex	Males	8.50 (6.39)	8.26 (6.09)	8.94 (6.10)
	Females	8.29 (6.24)	8.42 (5.46)	9.18 (5.54)
	t	0.397	-0.33	-0.47
Campus residence	Living on campus	7.07 (6.21)	7.74 (5.93)	7.76 (5.93)
	Living off campus	8.54 (6.30)	8.41 (5.74)	9.22 (5.78)
	t	-1.618	-0.815	-1.755

(Table 4) contd.....

Demographic Component	Subcategory	Mental Health Category: M (SD)		
		Depression	Anxiety	Stress
Relationship status	In a relationship	8.15 (6.42)	8.17 (5.90)	8.85 (5.90)
	Not in a relationship	8.69 (6.15)	8.57 (5.58)	9.36 (5.69)
	t	0.975	0.805	1.009
Year of study	1st	7.51 (6.38)	7.69 (5.68)	8.23 (5.66)
	2nd	7.69 (6.02)	7.15 (5.42)	8.39 (5.67)
	3rd	10.07 (6.48)	10.33 (6.09)	10.85 (6.29)
	4th	10.52 (5.61)	10.41 (5.14)	10.94 (4.87)
	5th	5.33 (4.66)	5.44 (3.54)	5.78 (3.93)
Faculty	Arts and Humanities	8.44 (5.82)	8.04 (5.64)	9.18 (5.52)
	Community and Health Sciences	6.80 (6.48)	7.13 (5.43)	8.08 (5.75)
	Dentistry	10.35 (4.91)	10.29 (4.76)	10.81 (4.78)
	Economic and Management Sciences	7.71 (6.22)	8.27 (5.58)	8.48 (5.25)
	Education	9.55 (6.38)	9.17 (6.11)	9.68 (6.35)
	Law	10.50 (6.12)	10.42 (5.99)	11.12 (5.48)
	Natural Sciences	8.30 (6.64)	7.52 (6.18)	8.34 (6.62)

*Mean scores have been displayed with standard deviations in brackets, M (SD)
Note: *= p <0.05, **= p <0.01

Regarding the faculty, significant differences were found between faculty groups in terms of depression scores, anxiety, and stress. The ANOVA analysis indicated significant differences between faculty groups in reported depression scores ($F_{(6,527)}$ = 3.93, p <0.001). Post-hoc analysis revealed that participants from the faculty of Community and Health Sciences had the lowest depression scores. Community and Health Sciences participants reported significantly lower depression than those from Dentistry [MD = -3.55, 95% CI (-6.61, -0.49), p = 0.011], Economic and Management Sciences [MD = -2.75, 95% CI (-5.44, -0.06), p = 0.042], and Law [MD = -3.70, 95% CI (-6.67, -0.72), p = 0.005]. Significant differences were found between the faculty groups in reported anxiety levels ($F_{(6,527)}$ = 3.72, p = 0.001). Post-hoc analysis indicated that the participants from the faculty of Community and Health Sciences had the lowest anxiety, with significantly lower reported anxiety than Dentistry [MD = -3.17, 95% CI (-5.97, -0.37), p = 0.015] and Law [MD = -3.30, 95% CI (-6.02, -0.58), p = 0.007]. Significant differences were found between faculty groups in stress levels ($F_{(6,527)}$ = 3.01, p = 0.007). Post-hoc analysis indicated a significant difference between the faculties of Community and Health Sciences and Law, where those from the faculty of Law reported higher stress than Community and Health Sciences students [MD = 3.04, 95% CI (0.29, 5.79), p = 0.020].

Regarding the year of study, significant differences between groups were found for all subscales (depression, anxiety, and stress). In terms of depression, ANOVA results showed significant differences between registration groups ($F_{(4,529)}$ = 5,88, p <0.001). Post-hoc analyses show third- and fourth-year students to have the highest depression. Third-year students indicated significantly higher depression scores than first-year [MD = 2.55, 95% CI (0.52, 4.58), p = 0.006] and second-year students [MD = 2.38, 95% CI (0.22, 4.54), p = 0.022]. Similarly, fourth-year students also had significantly higher depression scores than first [MD = 3.00, 95% CI (0.58, 5.43), p = 0.007] and second-year students [MD = 2.83, 95% CI (0.30, 5.36), p = 0.020]. Significant differences were found between registration groups and levels of anxiety reported ($F_{(4,529)}$ = 8.48, p <0.001). Post-hoc analysis showed that third-year students had higher anxiety scores than first [MD = 2.64, 95% CI (0.80, 4.48), p <0.001] and second-year students [MD = 3.18, 95% CI (1.23, 5.13), p <0.001]. Fourth-year students also had significantly higher stress scores than first [MD = 2.72, 95% CI (0.522, 4.91), p = 0.007] and second-year students [MD = 3.26, 95% CI (0.96, 5.54), p = 0.001]. In terms of stress, ANOVA results identified significant differences between the groups ($F_{(4,529)}$ = 6.72, p <0.001). Third-year students had significantly higher scores than first [MD = 2.62, 95% CI (0.75, 4.48), p = 0.001] and second-year students [MD = 2.4, 95% CI (0.48, 4.44), p = 0.006]. Fourth-year students had significantly higher anxiety scores than first [MD = 2.71, 95% CI (0.48, 4.94), p = 0.008] and second-year students [MD = 2.55, 95% CI (0.23, 4.87), p = 0.023].

3.2.3. Qualitative Results

The qualitative component of this study identified six principal themes with corresponding sub-themes that collectively captured the nature of mental health among undergraduate students. These themes emerged from a thorough thematic analysis of participant narratives, providing in-depth insight into their lived experiences. The identified themes encompassed academic pressure and cognitive demands, emotional distress and psychological challenges, identity and experiences of social judgment, coping mechanisms and support networks, environmental and societal influences, and motivation and goal orientation. Each theme was further delineated by sub-themes that highlighted specific dimensions of students' mental health experiences. Direct quotations from participants were included to ensure that the richness and authenticity of the data are preserved throughout the analysis (Table **5**).

Table 5. Themes and subthemes emerging from the interview process.

Theme	Subtheme	Representative Quotes
Academic pressure and mental overload	Overwhelming workloads and expectations	"A lot of schoolwork because schoolwork drains you, and then you get tired" – P3 **(male, Education major)** "The requirements of university life, they tend to skip that aspect of life and just focus on trying to get what's required to attain the degree. So, it's hectic (challenging) with studies" – P9 **(male, Physiotherapy major)** "Due dates, study time. Extra involvements, for example, like volunteering or anything like that. And also, mental wellness, so stress." – P10 **(male, Sports and Exercise Science major)** "…being bombarded by too much work" – P11 **(male, Education major)** "We've got a lot of deadlines that we ned to meet, no time to do anything else but work" – P19 **(female, Education major)**
	Lack of balance and structure	"Our sleep schedule is out of order. Whether we're on holiday or whether we are in a semester, our schedule is just out of order. … I think most of our days as students are spent studying." – P6 **(female, Social Work major)** "At some point, having episodes, just the university environment. It can get very toxic because you don't have time to breathe if you don't have a pattern like a schedule as to where you are supposed to be doing studies and also taking a break." – P11 **(male, Education major)** "It's quite difficult to balance all of it, so it can be overwhelming" – P19 **(female, Education major)**
Emotional distress and internal struggles	Anxiety, overthinking, and self-doubt	"Once you start overthinking, it's like, you just keep digging a hole and you start coming up with these conclusions by yourself…Your brain produces a lot of thoughts in a day, and the majority of them are negative…" – P3 **(male, Education major)** "Mental health does play a very big role because mental health affects the way you think about yourself." – P6 **(female, Social Work major)** "You don't have the energy, you're not in the right mindset" – P16 **(female, Industrial Psychology major)** "Me procrastinating (studying)…it's definitely myself." – P17 **(male, Social Work major)**
	Depression and sadness	"A lot of students are struggling with like, mental health, so depression…I've seen a lot of students struggling with depression" – P6 **(female, Social Work major)** "We just see emails being sent by communication, but then there is no intention of eradicating that…" – P11 **(male, Education major)** "Sadness develops into an ongoing thing, and that becomes in the form of depression, as well as anger issues" – P12 **(male, Sports and Exercise Science major)**
Identity, belonging, and judgment	Peer judgment and self-consciousness	"Especially in my field of studies (physiotherapy), is that people are afraid of judgment… judgment that actually constrains people" – P9 **(male, Physiotherapy major)** "You don't really know anyone, so it can be a bit intimidating… just being self-conscious" – P18 **(female, Commerce major)** "You've got this negativity around, where people are saying this negative thing…" – P19 **(female, Education major)**
	Navigating identity and fitting in	"The understanding that we have as students that we come from different backgrounds and not having to judge other people because of where they come from…The main one is where you belong and where you don't belong. I feel like that's the main one…They like friendship groups. Where do you fit in? Where don't you fit in?" – P17 **(male, Social Work major)**
Coping mechanisms and support systems	Social support and relationships	"It's just having a type of support, social network from people, having assistance available from other people…" – P5 **(female, Social Work major)** "Social interaction…is good for your mental health" – P6 **(female, Social Work major)** "Talking to me, trying to cheer me, just trying to talk some sense into me" – P7 **(female, Commerce major)** "They (friends) get engaged with you from that level…than for you to be isolated by yourself" – P11 **(male, Education major)** "My father or my mother will remind me, if you want to make it to the top, you're not going to do what everyone else does…" – P18 **(female, Commerce major)**
	Personal agency and awareness	"Everybody's going through a lot all the time…you're still able to live life, and you're still able to put a smile on your face" – P6 **(female, Social Work major)** "How aware are you of your downs and ups…do you do something about it…" – P17 **(male, Social Work major)**
Environmental and societal pressures	Peer pressure and substance use	"University is a playground for peer pressure." – P3 **(male, Education major)** "Alcohol consumption is a big thing around campus." – P6 **(female, Social Work major)** "Going out is unnecessary. Trying to fit in. It's so sad…" – P11 **(male, Education major)** "They'll sometimes say, hey, let's go for the drink this weekend…smoking, doing drugs, there are so many bad influences out there" – P12 **(male, Sports and Exercise Science major)** "Instead of being out there and getting fresh air…Substance abuse is still a common thing." – P13 **(female, Nursing major)**
Motivation, goals, and self-efficacy	Pressure to succeed Intrinsic motivation	"If I don't graduate…then there's a problem with me." – P6 **(female, Social Work major)** "You can achieve this, you can do this, that just drives you and motivates you…You just kind of have to tell yourself that you can do it. Because the brain is a powerful thing" – P19 **(female, Education major)**

Note: P = participant.

4. DISCUSSION

This study aimed to determine and explore the prevalence of mental health challenges among undergraduate students at a South African university. The quantitative results revealed a high prevalence of extremely severe anxiety among undergraduate students. On-campus students reported slightly higher anxiety levels compared to off-campus peers. Third- and fourth-year students exhibited the highest rates of extremely severe anxiety. Faculty-level data showed Dentistry, Law, and Education faculties with the highest anxiety prevalence, while Natural Sciences and Community and Health Sciences had higher proportions of normal stress levels. Relationship status and year of study also influenced anxiety and stress outcomes. The qualitative analysis identified six key themes: perceptions of mental health, coping mechanisms, sources of support, barriers to seeking help, stigma and awareness, and strategies for mental health maintenance.

4.1. Sex Of Participants In Relation To Mental Health

In terms of sex, both male and female students reported high levels of anxiety, with males slightly more affected by extremely severe anxiety (41.5%) compared to females (39.9%). While this gap was not substantial, it suggested that male students may be particularly vulnerable to intense psychological distress. The qualitative data reinforced this, with students speaking of emotional distress and internal struggles, such as overthinking, self-doubt, and a lack of motivation. These emotional patterns reflected broader concerns regarding mental health stigma and the internalisation of stress, which may differ subtly by gender. These results aligned with a previous South African study where it was reported that, compared to males, females had a significantly higher risk of depressive symptoms [38]. This suggests that female students may be generally more affected by these mental health challenges. These statistics have been found to differ from those of the WHO, where it has been indicated that anxiety disorders are about 50% more common among women than men throughout the life course [1]. Results of this current research study have suggested males to be influenced by a range of psychological, social, and cultural factors [26]. In many contexts, including South Africa, societal expectations of masculinity often place pressure on males to appear strong, self-reliant, and less emotionally expressive. This can lead to difficulties in acknowledging or seeking help for mental health issues, resulting in heightened anxiety that may go unaddressed [38, 39]. Furthermore, across the entire student population within this research study, almost half (40.6%) reported experiencing extremely severe anxiety. These results have been found to be similar to those reported by the WHO, where it has been indicated that among both males and females, anxiety is one of the most common mental disorders [1]. It is thus necessary for universities to explore alternative methods to enhance mental well-being and provide coping mechanisms that are suitable for contemporary students [40].

4.2. The Role Of Campus Residence In Students' Mental Health

Results derived from this study have indicated campus residence to influence mental health outcomes. Students residing on campus had a marginally higher prevalence of extremely severe anxiety (42.6%) compared to those living off campus (40.4%). Furthermore, a greater proportion of on-campus students reported normal levels of stress (55.5%), suggesting a mixed mental health profile. The qualitative findings shed light on these complexities, with students describing academic pressure and a lack of balance in their daily routines. Living on campus may amplify exposure to academic demands and reduce opportunities for rest, leading to a more intense university experience that can strain mental well-being. A plausible reason for this may be potential environmental factors contributing to differential experiences of mental health challenges among students living in distinct settings. In light of the South African context, previous research has indicated higher levels of depression and stress among off-campus students, which may be attributed to environmental and logistical factors [39, 40]. Students living off campus often face longer commute times, which can lead to fatigue, time constraints, and increased stress [41]. Additionally, the lack of immediate access to campus resources, such as counseling services and academic support, may exacerbate feelings of loneliness and hinder the ability to cope with academic pressures [42, 43]. Additionally, studies have reported that financial burdens associated with off-campus accommodation, coupled with potential safety concerns, may further contribute to heightened stress levels [44, 45]. In contrast, on-campus students typically benefit from closer proximity to university resources, a more structured living environment, and increased social interaction, which could mitigate some of the stressors associated with university life [46].

4.3. Relationship Status As A Factor Of Mental Health

When considering relationship status, students who reported being in a relationship experienced higher levels of extremely severe anxiety (44.5%), whereas students not in a relationship were more likely to report normal stress levels (47%). These findings suggest that while relationships can offer social support, they may also contribute to additional emotional burden. This has been consistent with the theme of coping mechanisms and support systems in the qualitative data, where the role of relationships, whether familial, romantic, or peer-based, was discussed as both a source of encouragement and emotional strain. In the South African context, higher rates of depression and stress among undergraduate university students not in relationships could be influenced by several factors [37, 39]. Students not in relationships might experience feelings of isolation or loneliness, especially in a university environment where social connections play a significant role in emotional well-being [47, 48]. The pressure to fit in or meet societal

expectations concerning relationships could also contribute to feelings of inadequacy or stress [30]. Additionally, mental health stigma in South Africa is still prominent, and that may deter students from seeking support, thus exacerbating their anxiety regardless of their relationship status [38]. To address the high levels of mental health challenges observed among students, a tailored approach is needed. Given that students not in relationships experience higher rates of depression and stress, while both groups face extremely high levels of anxiety, a possible solution may include targeted support for emotional well-being [49]. For students not in relationships, student emotional programs to combat isolation, such as social events and peer mentoring, could help reduce feelings of loneliness and stress [14]. For students in relationships, relationship counseling and workshops focused on healthy communication could alleviate relationship-related pressures. Reducing stigma around mental health and integrating support into academic advising could ensure that students receive comprehensive care, addressing both academic and emotional challenges [50-52].

4.4. Variation In Mental Health Across Years Of Study

Regarding the year of study, mental health outcomes varied by year of study. First- and second-year students showed the highest levels of normal stress (46.6% and 52%, respectively), whereas third- and fourth-year students experienced the highest levels of extremely severe anxiety (60% and 65.5%, respectively). These results reflected the cumulative nature of academic pressure. Students in the later years of their studies reported feeling overwhelmed by expectations and deadlines, describing a loss of balance and routine. This intensification of pressure was captured in qualitative themes relating to motivation and the drive to succeed, where students expressed concerns about meeting academic goals and navigating future uncertainties. These results have been found to be twice as high as those of a previous study, where it was indicated that 10% of first-year students displayed symptoms of severe depression [51]. A plausible reason for this may be the transitional period a student encounters once they enter the university environment for the first time [53, 54]. First-year students are different from the other undergraduate levels because, during their transition into the university environment, they require support systems to help them adjust academically and mentally to cope with this new tertiary phase of their studies [52]. These lower statistical scores among first-year students and higher scores among upper-level students highlight the toll of academic demands and transitional stressors over time [53, 54]. Although this study did not directly examine the specific sources of anxiety, it is plausible that a combination of academic workload, financial stress, uncertainty about future employment, and transition-related pressures may exacerbate these elevated levels across the year of study [50-53]. The academic expectations placed on students in the final years, such as completing dissertations, preparing for professional practice, or meeting graduation requirements, may intensify psychological strain. This indicates the need for increased support and targeted interventions for students in the later stages of their university journey, as they navigate heightened academic demands, mental health challenges, and the transition to professional careers [55-57]. This may, however, particularly be the case in South Africa, where job security is scarce, and good academic performance may serve as an asset for employability [19, 26].

4.5. Faculty Affiliation And Mental Health Experiences

At the faculty level, students from Dentistry (60.4%), Law (59.6%), and Education (46.4%) faculties recorded the highest prevalence of extremely severe anxiety. By contrast, students in Natural Sciences (53.7%), Community and Health Sciences (52.4%), Economic and Management Sciences (47.0%), and Arts and Humanities (40.3%) more frequently reported normal stress levels. Nevertheless, anxiety remained a concern across all faculties, including within Community and Health Sciences, where 32.2% of students still experienced extremely severe anxiety. Qualitative data illuminated these findings through discussions of identity, peer judgment, and external expectations, particularly within academically intense faculties. Students shared how faculty-specific cultures could influence perceptions of belonging, workload, and pressure, contributing to variations in mental health experiences. These results have been found to be approximately twice as high when compared to a previous study by Van Der Walt and colleagues [38]. Their study reported that students studying within the medical field reported experiencing symptoms of depression (36.4%) above the threshold for anxiety [38]. A plausible explanation for this is that the Dentistry faculty falls within the medical field and, as a result, students may experience more academic pressure and workload [58-60]. In the context of Law and Dentistry, this may be attributed to the demanding and high-stakes nature of their curricula, which often involve intense workloads, frequent assessments, and limited flexibility. Furthermore, both programs are known for their competitive atmospheres and early exposure to professional expectations, which may compound stress and anxiety levels. These results show the need for faculty-specific mental health interventions that consider the unique pedagogical and structural pressures experienced by students in these disciplines [57-61]. Particularly within some South African universities, students within the medical fields experience heightened academic pressures, rigorous clinical training, and increased mental health challenges, which may impact their overall well-being and academic performance [54, 58, 61]. This is largely due to the demanding curriculum, long hours of practical training, high expectations for clinical competency, and the emotional toll of patient care, all of which contribute to increased stress and mental health challenges among medical students [54, 60]. Moreover, this suggests that, in the South African context, students within the faculties of

Economic and Management Sciences, Education, Law, and Natural Sciences may experience heightened anxiety due to the unique academic and social pressures they face. These faculties often come with intense competition, rigorous academic requirements, and the pressure to secure stable careers post-graduation [19, 41]. Students within the Education faculty, for example, may struggle with the emotional demands of their future roles in shaping young minds, while Law students often face stress from the demanding nature of their studies and the pressure to succeed in a highly competitive field [61]. Similarly, students in the Natural Sciences faculty deal with complex subjects and practical laboratory assessments, which may increase their anxiety [62]. Therefore, it is important to develop mental health initiatives that are relevant to students within their respective faculties to ensure that tailored and context-specific support is provided [63-65].

4.6. Strengths and Limitations of the Current Study

This study aimed to determine and explore the prevalence of mental health challenges among undergraduate students at a South African university. This study did not aim to replace existing South African research on mental health. Instead, it is transferable to similar contexts as it enriches the literature by offering contextual insights into the mental health challenges experienced by undergraduate university students, with particular emphasis on the unique environment of HDIs. Therefore, the strength of this study lies in its ability to provide a context-specific understanding of mental health challenges within the domain of HDIs, highlighting factors that may not be captured in broader research and offering targeted insights for more effective interventions. However, this study has not been without limitations. This study employed convenience sampling for both the quantitative and qualitative phases, which may limit the generalizability of findings. The use of this method was influenced by practical constraints, including limited access to institutional databases for randomised selection and the voluntary nature of student participation. As a result, some faculties or student subgroups may be over- or underrepresented. Future research should aim to utilize more representative sampling strategies, such as stratified or random sampling across faculties and academic years, to ensure the broader applicability of results across diverse student populations. Additionally, the cross-sectional design of the study may prevent the establishment of causal relationships. To address these issues, future research should consider employing random sampling methods and adopting longitudinal designs that could allow for the identification of causal links. While efforts have been made to minimise bias, the inclusion of both online and hard-copy versions of the questionnaire may have introduced potential biases related to differences in user behaviour between the two formats. Although we took rigorous steps to validate and analyse the data, we encourage readers to interpret the findings with caution, considering the possible biases. The use of the DASS-21 to screen mental health challenges comprised another limitation, as the tool has been designed to identify students at risk but has not been intended for diagnostic purposes. As such, future studies should consider using instruments specifically designed for clinical diagnoses. Additionally, since the DASS-21 questionnaire was self-administered, participants' responses may have been influenced by subjectivity. Future research could benefit from employing diagnostic tools that reduce the potential for bias inherent in self-reported data. Lastly, although the study has provided valuable insights into students' mental health, it did not specifically investigate the roles of race, socioeconomic status, or language background. Given South Africa's complex sociopolitical history, these intersecting identities may likely influence mental health experiences and outcomes. The omission of these factors has been a limitation of the current study, pointing to an important direction for future research that can more fully explore how such social determinants shape mental health among diverse student populations.

4.7. Recommendations

Based on the results of this study, the following recommendations are provided to improve the mental health of undergraduate students, with a specific focus on female students, on-campus support, first-year students, and faculty-specific initiatives. Firstly, given that female students exhibited higher levels of mental health symptoms, student support services should consider developing gender-specific, tailored interventions. This may involve female wellness days, coordinated by Gender Equity Units, tailored to address the unique challenges faced by this population. Secondly, results have shown a higher prevalence of mental health challenges among students living off campus; therefore, universities could provide online therapeutic services, chatbots, and resources that are easily accessible and readily available. Emerging artificial intelligence tools, such as chatbots, could potentially assist in providing preliminary mental health support or counselling, particularly by offering accessible, immediate responses to students experiencing psychological distress. This could provide students with effective and efficient support services. Moreover, universities may use the information obtained *via* the chatbot to gain insights into student patterns, engagement levels, and outcomes. This would ensure that a tailored intervention could be employed. Thirdly, the higher levels of mental health disorders among first-year students indicated that the transition to the university environment may be daunting and challenging for some. Therefore, first-year transition programs should be initiated where first-year peer-mentors could assist first-year students with coping and support strategies. This could assist first-year students with adjusting to the university environment and academic expectations. First-year workshops could focus on mental and emotional well-being before the examination period. Lastly, the variation in mental health disorders across different faculties suggested academic pressures and environments to play a role in student well-being. Mental health services should collaborate with

faculty members to develop tailored interventions that address the specific needs of students in each faculty, for example, implementing stress management workshops for students in high-pressure faculties, such as Community and Health Sciences.

4.8. Practical Policy Recommendation for Implementation

To translate findings into actionable policy, several context-sensitive interventions are recommended. Faculties with high mental health challenges, such as Law and Dentistry, could benefit from embedding dedicated mental health professionals to provide timely and discipline-specific support [65]. Additionally, peer-support models should be expanded across student residences to foster community-based coping mechanisms and early identification of distress. Universities are also encouraged to strengthen collaborations with public health systems to bridge service gaps, particularly for students living off-campus who may face barriers to accessing campus-based resources. Such partnerships could include referral pathways, joint awareness campaigns, and integrated mental health services that extend beyond university settings. Together, these strategies aim to create a holistic support network tailored to the diverse needs of the student population. A fundamental challenge for universities is transitioning from reactive mental health responses to preventive strategies that are inclusive, sustainable, and culturally resonant. This requires implementing early screening and awareness programs, integrating mental health education into curricula, and fostering campus cultures that reduce stigma and promote well-being. Importantly, interventions must be tailored to reflect the diverse cultural backgrounds of the student body, ensuring relevance and accessibility. Sustainable mental health support also depends on institutional commitment, cross-sector collaboration, and continuous evaluation to adapt to evolving student needs. By embedding mental health into the core of institutional planning and student development, universities can meaningfully contribute to Sustainable Development Goal 3 (SDG3), ensuring healthy lives and promoting well-being among undergraduate university students.

4.9. Future Research

Future studies may build on the sample size by investigating various universities across South Africa. This could enable a more comprehensive understanding of mental health among undergraduate university students, ultimately increasing the diversity of perspectives and experiences. This study has highlighted coping strategies and support systems as vital components of student resilience, reflecting student agency in managing mental health challenges. However, the differential effectiveness of these mechanisms across demographic groups warrants further exploration. For example, male students, who reported higher rates of severe anxiety, may face unique barriers, such as stigma, that reduce their likelihood of accessing peer or professional support. Additionally, informal support networks, including family, friends, and student communities, play a critical role in mediating mental health outcomes, yet their influence may vary by cultural and social contexts. Future research should investigate these dynamics in-depth to inform tailored interventions that address gendered and cultural nuances in help-seeking and coping. Furthermore, researchers could examine the effectiveness of student support services in mental health outcomes. This could offer a more comprehensive analysis of their impact on student well-being. As a result, targeted interventions could be developed and implemented among the university student population aimed at enhancing their holistic health. While this study has emphasised student experiences and aligned with Sustainable Development Goal 3 by advocating for institutional accountability, the roles of academic staff, curricula, and institutional culture remain underexplored. Future research should aim to include faculty members and administrators to capture their perspectives on how academic demands, teaching practices, and institutional norms contribute to student mental health outcomes. Integrating these systemic and interpersonal levels of analysis can prove to be crucial for developing comprehensive, sustainable solutions that address the root causes of distress within higher education settings.

CONCLUSION

Therefore, this study aimed to determine and explore the prevalence of mental health challenges among undergraduate students at a South African university. The results have highlighted gender and demographic variations in mental health challenges among undergraduate students. While females have reported slightly higher levels of depression and stress, males have exhibited a marginally higher prevalence of extremely severe anxiety. Factors, such as relationship status, living arrangements, academic year, and faculty affiliation, have been found to significantly influence mental health outcomes, with students not in relationships, those living on campus, and faculties, like Dentistry, Law, and Education, showing elevated anxiety levels. These findings have highlighted the critical role universities play in advancing SDG3 (Good Health and Well-being) by prioritising student mental health. Developing targeted, context-specific interventions is essential to effectively support the diverse needs of student populations. University policies must integrate these tailored strategies to foster inclusive, sustainable mental health support systems on campus.

AUTHORS' CONTRIBUTIONS

The authors confirm their contribution to the paper as follows: C.J.: Study conception and design: C.J.: Data collection; C.J. and S.D.: Analysis and interpretation of results: C.J., S.D., and N.R.: Drafting of the manuscript; All authors reviewed the results and approved the final version of the manuscript.

LIST OF ABBREVIATIONS

ANOVA	=	Analysis of Variance
CI	=	Confidence Interval
DASS-21	=	Depression, Anxiety, and Stress Scale
HDI	=	Historically Disadvantaged Institution
MD	=	Mean Difference
SD	=	Standard Deviation
SDG	=	Sustainable Development Goal
WHO	=	World Health Organisation

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethics approval was obtained from the Humanities and Social Sciences research ethics committee at a university in the Western Cape province of Cape Town, South Africa (reference number HS21/10/24) prior to the commencement of the research.

HUMAN AND ANIMAL RIGHTS

All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee, and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Information about the study was provided to the participants in person, and afterwards, written informed consent was obtained online for voluntary participation in the study.

STANDARDS OF REPORTING

GRAMMS guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supportive information are available within the article.

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CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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