

An Epidemiological Investigation into Mental Health Literacy and Preventive Practices Among Undergraduate Students at Rivers State University, Port Harcourt, Nigeria

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Abstract

Objective: To assess mental health knowledge, promotional practices, and associated factors among undergraduate students at Rivers State University, Port Harcourt. **Design:** A cross-sectional clinical epidemiological study. **Subjects/Patients:** 371 undergraduates from eight faculties of the university. **Methods:** Data were collected via an online structured questionnaire and analysed with SPSS v27. Descriptive statistics and chi-square tests were used to assess associations between sociodemographic variables, knowledge, and mental health practices. A $p < 0.05$ was considered statistically significant. **Results:** Mean age was 21.1 ± 2.4 years; 64.4% were females. Approximately 49.9% had fair knowledge of mental health, 34.8% had good knowledge, and 15.4% had poor knowledge. 20.8% were aware of mental health support services, and 79.2% were unaware of support services. While 63.6% showed moderate engagement in mental health-promoting behaviours, only 25.9% had excellent mental health practices, and 10.5% had poor mental health practices. Age ($\chi^2 = 16.09$, $p = 0.003$) and year of study ($\chi^2 = 21.30$, $p = 0.02$) were significantly associated with mental health practices. Gender ($\chi^2 = 3.03$, $p = 0.22$) and knowledge ($\chi^2 = 7.96$, $p = 0.09$) were not significantly associated with mental health practices. **Conclusion:** Despite good mental health knowledge, engagement in promotion practices remains low. Structured orientation and improved access to mental health resources are needed to enhance uptake and bridge the knowledge-practice gap.

Keywords: Mental Health Literacy, University Students, Health Promotion, Nigeria, Student Well-Being, Mental Health Services.

Introduction

Mental health is a vital aspect of overall well-being, encompassing emotional, psychological, and social components [1]. University students face several challenges, including academic workload, financial strain, peer pressure, and the struggle for independence, all of which increase vulnerability to mental health issues [2-4]. This transitional period often coincides with the peak age of onset for many psychiatric disorders [5].

Globally, mental and substance use disorders are the leading causes of disability among individuals aged 10-29 years, accounting for approximately 16% of the global burden of disease [6]. Common issues among students include depression, anxiety, and suicidal behaviour, which are aggravated by poor coping mechanisms and limited services [7,8]. In sub-Saharan Africa, stigma, limited knowledge, lack of trained personnel, and underfunding compound the problem [9-11].

In Nigeria, mental health services are grossly inadequate, with fewer than three hundred psychiatrists for over two hundred million people [12]. The stigma of mental illness discourages help-seeking, with emotional distress often perceived as personal weakness [13-15]. Although the 2021 Mental Health Act replaced the outdated Lunacy Act of 1958, its implementation, especially in educational settings, remains limited [16].

Universities play a critical role in shaping health behaviours and fostering student well-being. A healthy academic environment should prioritise emotional resilience and psychological support alongside academic achievement [17]. Mental health promotion involves strategies such as access to counselling, peer networks, stress management programs, and inclusive policies [18-20].

A key element of mental health promotion is mental health literacy, defined as knowledge and beliefs that assist in the recognition, management, or prevention of mental illness [21]. Improved literacy enhances help-seeking, reduces stigma, and

fosters peer interaction [22,23]. Yet in low-resource countries like Nigeria, many students, especially those outside health-related disciplines, remain unaware of mental health issues and available support [24].

Only a few Nigerian universities have incorporated mental health education or evaluated students' mental health knowledge, attitudes, and practices [25,26]. This contributes to a gap between knowledge and behavioural engagement.

At Rivers State University (RSU), one of the leading institutions in South-South Nigeria, increasing reports of stress, depression, and substance use highlight the need for urgent attention. Understanding students' mental health knowledge and promotion practices is essential for developing tailored, data-driven interventions. This study aimed to assess mental health literacy, promotional practices, and associated factors among undergraduate students at Rivers State University.

Methods

Study Design and Setting

This study employed a cross-sectional clinical epidemiological study design. RSU is a prominent multi-cultural urban university with a vibrant academic community, hosting over 28,000 undergraduate students across thirteen faculties. The university's diverse student body, representing various ethnic, cultural, and socioeconomic backgrounds, provided an ideal setting for this research. The dynamic environment of RSU allowed for a comprehensive assessment of mental health awareness and practices, capturing the nuances of student life in a high-pressure academic setting.

The study was conducted for three months, from October to December 2024, to ensure ample time for data collection and analysis.

The setting of RSU was further characterised by its urban location, which exposed students to unique stressors such as traffic congestion, noise pollution, and the fast-paced lifestyle typical of Port Harcourt, a major Nigerian city. These environmental factors, combined with academic pressures, make the study particularly relevant for understanding how students manage their mental health in such a demanding context.

Study Population

The target population for this study consisted of all full-time undergraduate students enrolled at RSU during the 2024 academic session. The inclusion criteria were designed to ensure a representative sample: participants were currently enrolled as full-time undergraduates at any year of study (from 100 to 600 levels) and were willing to provide informed consent. This approach ensured that the findings would reflect the experiences of a broad spectrum of students, from first-year students to final-year students.

Exclusion criteria were applied for the study. Part-time students were excluded due to their potentially different academic and life experiences, which could confound the results. Additionally, students who declined to participate or had known psychological or mental disorders were excluded to avoid bias and ensure that the data reflected the general student population's mental health knowledge and practices.

The rationale for focusing on full-time undergraduates was rooted in the need to capture the experiences of students fully immersed in university life, including academic, social, and extracurricular activities. This group is particularly vulnerable to mental health challenges due to the pressures of balancing coursework, examinations, and personal development.

Sample Size

The sample size for this study was calculated using Cochran's formula for cross-sectional studies:

$$n = Z^2 * p * (1 - p) / d^2$$

Where:

- n = minimum sample size.
- Z = Standard normal deviate (1.96 for a 95% confidence level).
- p = Estimated proportion of the population with the attribute (60%, derived from another previous study) [27].
- d = Margin of error (0.05).

The initial calculation yielded a sample size of 369. A 10% non-response rate was used to calculate the total sample size of 410. However, 371 students participated, indicating a high response rate of 90.5%. This good response rate minimised non-response bias and enhanced the reliability of findings.

Sampling

A multi-stage sampling technique was employed to ensure representativeness:

1. **First Stage:** Eight faculties were randomly selected from the university's thirteen faculties using a simple random sampling method (balloting). This step ensured that the sample reflected the diversity of academic disciplines at RSU.
2. **Second Stage:** Proportional sampling was used to select departments within the chosen faculties. Departments were regarded as strata, and participants were allocated proportionally based on the size of each academic year (Year of study). This approach ensured that each year of study was accurately represented.
3. **Third Stage:** Participants were selected using computer-generated random numbers, further enhancing the randomness and fairness of the sampling process.

This sampling strategy ensured that the study population was representative of the broader student body, allowing for generalisability.

Data Collection Instruments

Data were collected in December 2024 using a structured, self-administered questionnaire adopted from previously validated studies. The questionnaire was in three main sections:

1. **Socio-demographic Profile:** This section captured essential background information, including age, sex, year of study, faculty, and ethnicity. These variables were critical for understanding how sociodemographic factors might influence mental health knowledge and practices.
2. **Knowledge of Mental Health:** This section assessed students' understanding of mental health by asking questions on:
 - Definitions of mental health and mental illness.
 - Recognition of common mental health conditions (e.g., depression, anxiety, schizophrenia).
 - Awareness of factors affecting mental health (e.g., stress, genetics, environment).
 - Knowledge of mental health promotion concepts (e.g., mindfulness, counselling).
3. **Practices Related to Mental Health Promotion:** This section assessed the following categories:

Excellent practices

- Therapy & Professional Support: Regular sessions with a qualified therapist (Cognitive Behavioural Therapy, Dialectical Behaviour Therapy, trauma-informed care).
- Self-Care Routine: Consistent sleep (7–9 hrs), balanced nutrition, hydration, and exercise (3 to 5 times a week).
- Mindfulness & Stress Management: Daily meditation, deep breathing, or yoga.
- Strong Social Support: Healthy relationships, open communication, and community engagement.
- Boundaries & Work-Life Balance: Saying no, managing workload, and taking breaks.
- Purpose & Growth: Engaging in meaningful activities, hobbies, or volunteering.

Moderate practices

- Irregular Therapy: Occasional sessions but lacks consistency.
- Inconsistent Self-Care: Sporadic exercise, poor sleep habits, or unbalanced diet.
- Passive Coping: Mild reliance on television, gaming, or social media for escape (but not excessive).
- Limited Social Connections: Some support but infrequent or superficial interactions.
- Occasional Stress Relief: Using mindfulness or relaxation techniques inconsistently.
- Work-Life Imbalance: Struggling to set boundaries but making some effort.

Poor practices

- Avoiding Help: Refusing therapy or denying mental health struggles.
- Neglecting Basics: Chronic sleep deprivation, poor diet, or substance misuse.
- Isolation: Withdrawing from friends/family, no support system.
- Harmful Coping: Excessive alcohol/drugs, self-harm, or emotional outbursts.
- Chronic Stress: No stress management, burnout, or toxic work environments.
- Rumination & Negativity: Persistent self-criticism, catastrophizing, or hopelessness.

The questionnaire was administered online via Google Forms, ensuring ease of access and participation for students. The digital format also facilitated efficient data collection and reduced the risk of errors associated with manual entry.

Pre-Testing

To ensure the validity of the questionnaire, pre-testing was carried out on thirty students from a non-participating faculty. Feedback from the pre-test led to minor adjustments in wording and structure to improve comprehension and consistency. The pre-testing also confirmed that the questionnaire could be completed within the estimated time of 15–20 minutes, minimising participant burden.

Validity and Reliability of Instrument

The questionnaire was validated to ensure accuracy and reliability:

- Content Validity: Experts in mental health and public health reviewed the questionnaire to confirm that it covered all relevant domains.
- Construct Validity: The instrument was tested for its ability to measure the intended constructs (knowledge and practices) using statistical methods.

- Reliability: Cronbach's alpha assessed internal consistency. There was good internal consistency in the knowledge section ($\alpha = 0.82$), while the practice section showed acceptable internal consistency ($\alpha = 0.76$).

Further data validation and reliability testing were conducted with Microsoft Excel 365 and Statistical Product and Service Solution Package (SPSS) Version 27 (Armonk, NY: IBM Corporation).

Data Analysis

Data analysis was conducted with SPSS version 27. The following statistical methods were employed:

- Univariate Analysis: Frequency distributions, proportions, means, and standard deviations summarised sociodemographic characteristics and key outcome variables (knowledge and practice levels).
- Bivariate Analysis: Pearson's chi-square test was used to assess associations between categorical variables, such as the relationship between knowledge and mental health practices, as well as other associated factors such as gender, age, year of study, and faculty. A $p < 0.05$ was considered statistically significant.

Knowledge levels were categorised as:

- Good ($\geq 80\%$).
- Fair (50–79%).
- Poor ($< 50\%$).

Practice was categorised as:

- Excellent (score 8–10).
- Moderate (score 4–7).
- Poor (score 0–3).

Results

Sociodemographic Characteristics

A total of 371 undergraduate students participated in the study. Key findings included:

- Age: Respondents ranged from 18 to 30 years, with a mean age of 21.14 ± 2.36 years. About half (49.3%) were aged 18–20 years.
- Gender: Female students dominated (64.4%, $n = 239$), reflecting the gender distribution at RSU.
- Year of Study: Participants were selected from the various academic levels, ensuring representation of all stages of undergraduate education.
- The respondents (Table 1) were young (late teens to early twenties) and were females. The high proportion of students in health science is remarkable. It may influence the overall levels of knowledge (as those in health-related courses might have more exposure to mental health topics).
- Overall, 49.9% had fair knowledge of mental health, 34.8% had good knowledge, and 15.4% had poor knowledge (Table 2; Figure 1). 79.2% were unaware of available support services, while 20.8% were aware (Table 3; Figure 2). Many students (63.6%) reported moderate engagement in positive mental health practices, while only 25.9% had high engagement, and 10.5% had poor mental health practices (Table 4; Figure 3). Age ($\chi^2 = 16.09$, $p = 0.003$) and year of study ($\chi^2 = 21.30$, $p = 0.02$) were significantly associated with better practices; however,

gender and faculty were not statistically significant in mental health practices (Table 5) There was no statistically significant association between knowledge of mental health and mental health practice ($\chi^2=7.96$, $p=0.09$). (Table 6). Excellent mental health practices (34.1%) were reported by those with good knowledge of mental health;

those with poor knowledge had the lowest proportion of excellent practices (24.6%) (Table 6). Students aged 24 years and above had better mental health practices compared to those aged 18 to 20 years (Figure 4). Students in the 6th year of study had better mental health practices than students in the other years of study (Figure 5).

Table I. Sociodemographic summary of respondents (N = 371).

Characteristic	Category	Frequency	Percentage
Age (years)	18–20	183	49.3%
	21–23	111	29.9%
	≥24	77	20.8%
	Mean age = 21.1 (±2.4) years		
Gender	Male	132	35.6%
	Female	239	64.4%
Year of Study	1st year	21	5.7%
	2nd year	87	23.5%
	3rd year	91	24.5%
	4th year	69	18.6%
	5th year	71	19.1%
	6th year	32	8.6%
Faculty/Discipline	Medicine/Nursing/Clinical Sciences	173	46.6%
	Science (e.g. Biochemistry, Biology, etc.)	92	24.8%
	Engineering (all fields)	26	7.0%
	Computer Science	12	3.2%
	Law/Arts/Management (combined)	48	12.9%
	Accounting/Finance	3	0.8%
	Human Anatomy/Physiology	17	4.6%

Table 2: Mental Health Knowledge Levels of Students

Knowledge Level	Percentage (%)
Good	34.8
Fair	49.9
Poor	15.4

Table 3: Students' Awareness of Support Services

Category	Percentage (%)
Aware of support services	20.8
Unaware	79.2

Table 4: Mental Health Practice Levels among Students

Practice Level	Percentage (%)
High (Excellent)	25.9
Moderate	63.6
Low (Poor)	10.5

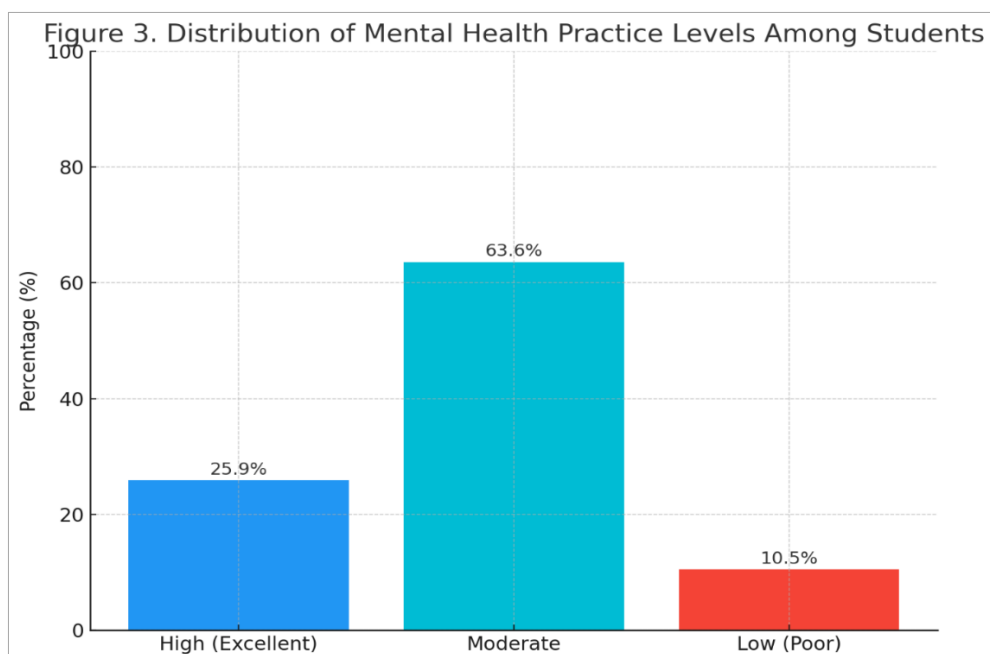
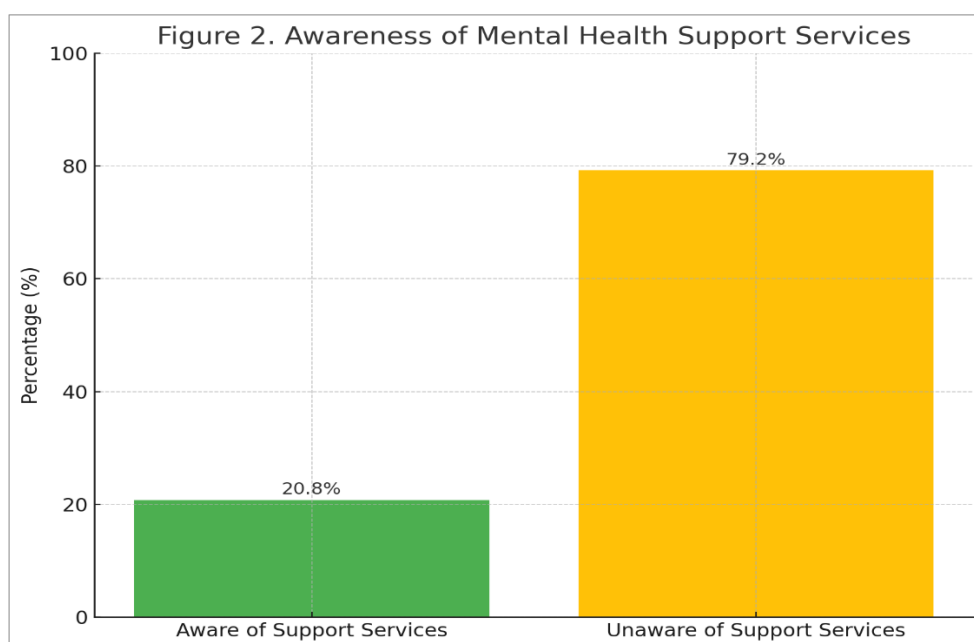
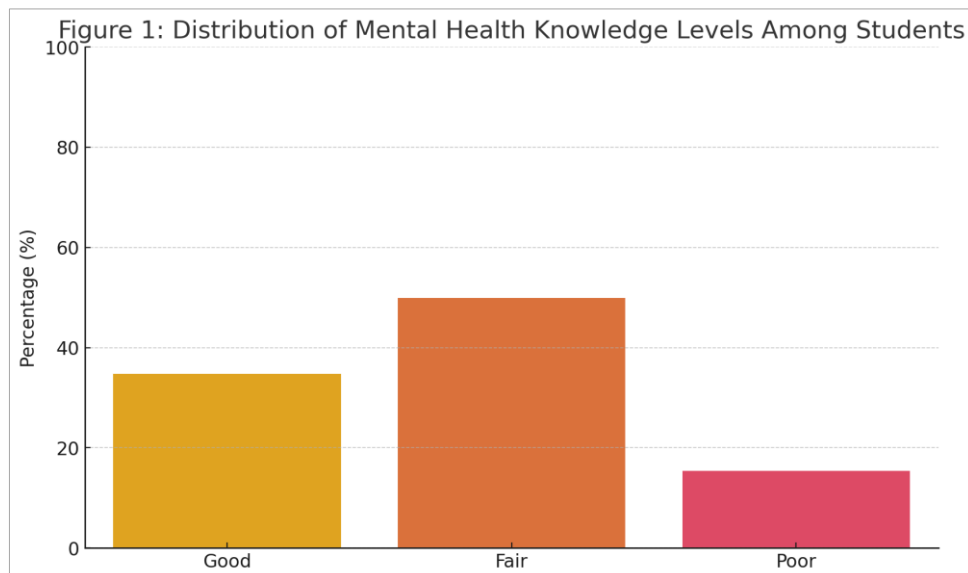
Table 5. Association between mental health practice level and demographic variables of students (chi-square test results, N=371).

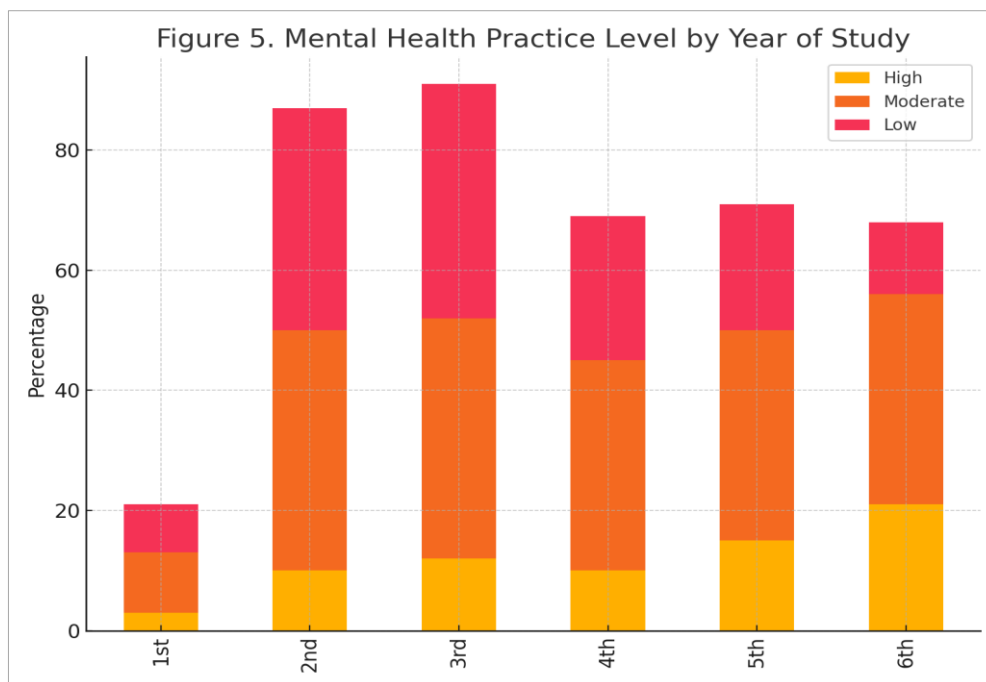
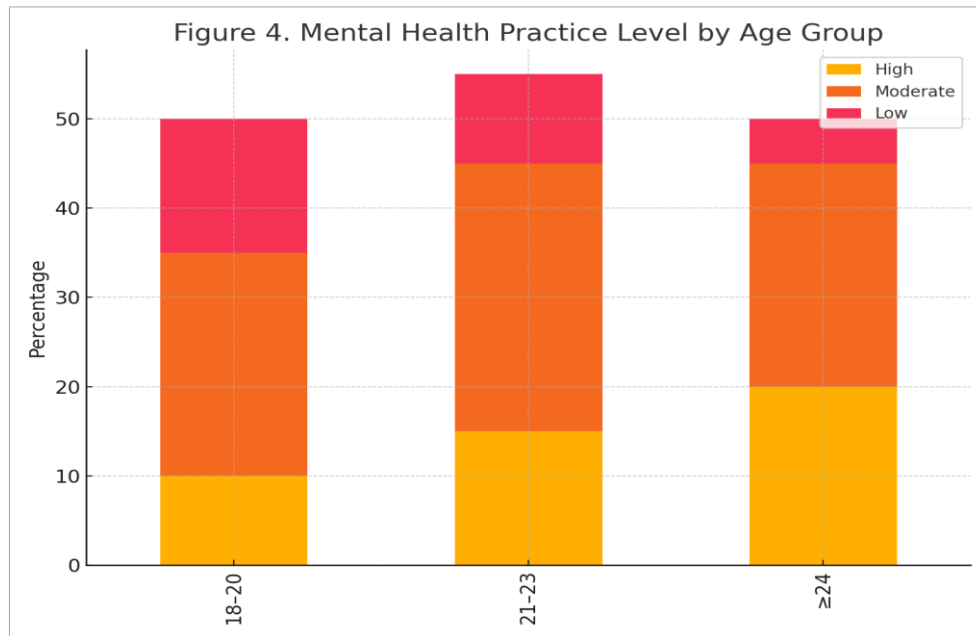
Variable	χ^2 (df)	p-value
Age group (years)	16.092 (4)	0.003*
Gender	3.028 (2)	0.220
Year of study	21.299 (10)	0.019*
Faculty	12.34 (14)	0.56

*Statistically significant ($p<0.05$).

Table 6. Association between mental health knowledge levels and mental health practices of students (chi-square test results, N=371).

Mental Health Knowledge Levels	Various levels of mental health practice			Total	χ^2	df	p-value
	Poor practices	Moderate practices	Excellent practices		7.956	4	0.093
Poor knowledge	7	36	14	57			
Fair knowledge	22	125	38	185			
Good knowledge	10	75	44	129			
Total	39	236	96	371			





Discussion

The study showed that while mental health knowledge is an important public health problem among students at RSU, this knowledge did not translate into active engagement in mental health-promoting practices. This disconnect between knowledge and behaviour is a well-documented phenomenon in mental health research, particularly in university settings within low- and middle-income countries (LMICs) [28,29]. The findings underscore the complexity of mental health literacy and the need for multifaceted interventions to bridge this gap.

Mental Health Knowledge Among RSU Students

Most RSU students demonstrated fair to good knowledge of mental health concepts. This finding differed from those of similar studies in other Nigerian universities, which reported lower levels of mental health literacy [30]. This discrepancy may stem from differences in educational curricula, exposure to mental health campaigns, or institutional support for mental health initiatives. The increased recognition of mental disorders aligns with global trends, as these

conditions have gained significant visibility in recent years through media coverage and widespread awareness campaigns [31]. Therefore, there is a need for various mental health education programmes for students in Nigerian universities.

Engagement in Mental Health Promotion Activities

Despite the high levels of mental health knowledge, participation in formal mental health promotion activities is poor. This lack of engagement may result from structural barriers, including the unavailability of programmes, insufficient publicity of events, and institutional inertia. A study reported a lack of active student mental health programmes or failure to effectively communicate their availability to students in many Nigerian universities [32]. Our study reported that a significant majority of students were unaware of existing campus mental health resources, underscoring a critical communication gap between the university administration and the student body.

Interestingly, students expressed a cheerful outlook toward institutional involvement in mental health, suggesting a readiness and demand for structured mental health support. This presents an

opportunity for RSU to develop and implement targeted mental health initiatives that are well-publicised and easily accessible to students. By addressing these structural and communication barriers, the university can promote a more supportive environment for mental health.

The Role of Age and Academic Year in Mental Health Practices

The study found that older students and those in more advanced years of study were significantly more likely to engage in positive mental health behaviours. This trend may explain the cumulative benefits of experience, including improved crisis resolution skills, better time management, and enhanced stress management abilities developed over time. This finding is consistent with global higher education research, which indicates that younger students are often more vulnerable to poor mental health outcomes due to a lack of coping experience and the challenges associated with academic transitions [33,34].

Given the finding, there is a pressing need for early interventions targeting new and second-year students. Induction sessions could include modules on stress management, help-seeking behaviours, and mental health resources. By equipping younger students with these skills early in their academic journey, RSU can mitigate the risks of mental health challenges and promote long-term well-being.

Gender and Mental Health Practices

Contrary to similar studies that reported female students as being more initiative-taking in seeking help and engaging in self-care [35], this study did not find a significant association between gender and mental health practices. This suggests a narrowing gender gap in mental health behaviours, due to increased mental health advocacy and evolving cultural norms that encourage emotional expression across all genders [36]. The absence of gender disparities in this context is a promising development, indicating that mental health initiatives at RSU are reaching a diverse student population. However, continued efforts are required by the university authority to ensure that all students, regardless of gender, feel empowered to prioritise their mental health.

The Knowledge-Practice Gap

One of the most striking findings of this study was the absence of a statistically significant association between mental health knowledge levels and mental health-promoting practices. This outcome serves as a sobering reminder that accurate information alone is insufficient to drive behavioural change. This observation aligns with broader principles in health promotion, which posit that knowledge is a necessary but not sufficient condition for action [37].

Several factors mediate the pathway between knowledge and practice, including stigma, time constraints, emotional readiness, perceived effectiveness of services, and lack of encouragement [38]. In addressing these barriers, interventions must extend beyond awareness campaigns. Behavioural activation strategies, such as goal setting and action planning, can help students translate knowledge into practice. Additionally, fostering social support systems and creating structural enablers, such as easy access to on-campus mental health services, can further facilitate positive mental health behaviours.

The Potential of Peer Support Networks

Our study highlighted a strong demand for peer support networks and student-led mental health clubs among RSU students. This supports research on global university programmes, which have demonstrated that peer interventions, particularly those led by students, can significantly improve mental health outcomes and

increase the uptake of services [39-41]. Peer-to-peer models offer advantages, including relatability, reduced stigma, and increased accessibility. By leveraging the power of peer support, RSU can create a more inclusive and effective mental health ecosystem.

Recommendations for Future Interventions

The findings of this study provide a critical baseline for future mental health programming and evaluation efforts at RSU. The identified gaps, particularly the knowledge-practice gap, service unawareness, and limited formal engagement, highlight the urgent need for an institutional mental health strategy that is driven by data, student-centred, and sustainably supported.

1. **Comprehensive Mental Health Education:** Expand mental health education to cover a wider range of conditions, including less publicised disorders like bipolar disorder and psychosis. Incorporate interactive and engaging methods, such as workshops and seminars, to enhance understanding and retention.
2. **Improved Communication:** Enhance the visibility and accessibility of mental health resources through targeted campaigns, social media outreach, and collaboration with student organisations.
3. **Early Interventions:** Develop tailored programmes for new and second-year students, focusing on stress management, coping strategies, and help-seeking behaviours.
4. **Peer-Led Initiatives:** Establish and support student-led mental health clubs and peer support networks to foster a culture of openness and mutual aid.
5. **Structural Enablers:** Ensure that mental health services are easily accessible, well-staffed, and adequately funded. Provide training for faculty and staff to recognise and respond to mental health concerns.

Conclusion

This study underscores the importance of addressing both knowledge and behavioural aspects of mental health among university students. While RSU students demonstrated a fair level of mental health knowledge, significant gaps remain in translating this knowledge into practice. By implementing targeted, multifaceted interventions, RSU can create a supportive environment that promotes mental well-being for all students. Future research should focus on evaluating the effectiveness of these interventions and identifying additional barriers to mental health engagement.

List of abbreviations

RSU: Rivers State University.
SPSS: Statistical Product and Service Solution.
LMIC: Low- and Middle-Income Countries.

Declarations

Acknowledgement

The authors do acknowledge all the students who voluntarily participated in the study. The contributions of the University authority are well appreciated.

Conflict of interest

The authors declare that there is no conflict of interest.

Funding/ financial support

The research received no external financial support.

Authors' Contributions

Dr Briggs, Nduye C.T., conceptualised the study, assisted with the manuscript writing, and conducted the final review of the manuscript. Dr Nwadiuto, Ifeoma performed the data analysis, interpretation, and assisted with manuscript writing. Dr Pius Ositadinma also assisted with the data analysis and interpretation. Dr Bassey, Miracle A and Dr Chineme, Caleb C, assisted with the literature review, data collection, and data entry. All authors read and approved the final manuscript.

Ethical Clearance

Ethical approval was obtained from the Rivers State University Research Ethics Committee. Informed consent was obtained electronically from each participant. Participation was voluntary, and participants could skip any question or quit the survey at any time without penalty. No personal identifiers were collected, and all responses were kept confidential and used solely for research purposes. Data were stored in a password-protected computer accessible only to the research team. In addition, students who might become distressed by any mental health questions were provided with contact information for the university counselling centre and a faculty mental health advocate. This is in line with the best ethical practices for research on potentially sensitive topics.

Data Availability

The datasets for this study are available from the corresponding author on reasonable request. Due to privacy concerns, individual-level data are not publicly available.

Supplementary Materials

None

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