

EXPLORING MENTAL HEALTH STATUS AND ITS PREDICTORS AMONG YOUNG PEOPLE IN A NIGERIAN TERTIARY INSTITUTION

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Abstract

Introduction

Mental health disorders among adolescents globally are increasingly recognized as major public health concerns. The social dynamics in Rivers State create a unique social challenge which predisposes undergraduates to mental health disorders. This study determined the pattern and predictors of mental health disorders among undergraduate students in Rivers State.

Methodology

This is a descriptive cross-sectional study carried out among 357 undergraduate students on full time academic programmes in Rivers State University recruited using multistage sampling technique. Data on socio-demography and mental health status was collected online using a validated questionnaire, the Standardized Depression, Anxiety and Stress scale (DASS-21) on a 4 - point Likert scale.

Results

Mental health disorders are anxiety (70.8%), depression (59.4%) and stress (37%). Predictors of depression were place of residence (OR = 0.318; 95% CI = 0.147 – 0.689), substance use (OR = 0.196; 95% CI = 0.077 – 0.497) and adequate social support (OR = 2.224; 95% CI = 1.192 – 4.151); predictors of anxiety disorder were place of residence (OR = 0.388; 95% CI = 0.168 - 0.893), adequate social support (OR = 2.25; 95% CI = 1.178 – 4.303); stress disorder were place of residence (OR = 0.365; 95% CI = 0.199 – 0.672), social support (OR = 1.756; 95% CI = 1.028 – 2.998) and substances use (OR = 0.291; 95% CI = 0.141 – 0.599).

Conclusion

Anxiety disorder is the most common mental health disorder among undergraduate students in Rivers State University Port Harcourt. Predictors are place of residence, lack of social support and substance use.

Keys words: Anxiety, Depression, Stress, Mental Health Disorders, Rivers State University

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INTRODUCTION

Mental health disorders are increasingly recognized as major public health concerns globally. They are health conditions that generally affect emotion, thinking or behaviour or a combination of these, and may be associated with distress and/or problems functioning in social, work or family activities.^{1,2} It contributes significantly to global disease burden with depression projected by WHO as the leading cause of disability-adjusted life years in 2030.³ Adolescents are vulnerable to mental health disorders which commonly presents as anxiety, depression, schizophrenia, stress disorders, attention and behaviour disorder such as risky sexual behaviours that exposes them to unwanted pregnancies and STIs.³⁻⁵ Furthermore mental health disorders can severely affect cognitive function and impair academic and professional performance of undergraduate students.^{4,6}

Globally, mental health disorders are prevalent among university students, with studies indicating high rates of anxiety, depression, and stress. For instance, a comprehensive study by Auerbach et al. (2017) found that 20.3% of college students across 19 countries reported having a mental health disorder within the past year.⁷ Mental health disorders among students are widespread in Africa even though it is often underreported due to stigma and inadequate mental health services. A systematic review and meta-analysis of 64 studies showed that the prevalence of depression symptoms in the African region was 40.1%.⁸ A community-based study in Ghana reported that 51.8% of the population has had at least one form of mental health disorder.⁹ It has been suggested that about 20% of adolescents in Nigeria experience one form of mental health disorder or the other.³

The interplay of rigorous curriculum which creates academic pressures, financial constraints, sex, student level, socio-cultural factors, stigmatization and inadequate mental health infrastructure has been adduced for the increased risk of mental health disorders among undergraduates.^{10,11,12} The social dynamics in Rivers State create a unique social challenge which leads to the high prevalence of substance abuse, cultism, and violence, which could contribute to mental health disorders among undergraduate students in

Rivers State Nigeria.¹³ This study therefore seeks to determine the pattern of mental health disorders among undergraduate students in Rivers State and to identify its associated factors.

METHODOLOGY

The study was carried out in the Rivers State University, a government owned tertiary institution located in Nkpolu-Oroworukwo, Port Harcourt, Rivers State in the Niger Delta region of Nigeria. Port Harcourt is a metropolitan city, known for its rich commercial and industrial activities. The University community is comprised of students of which undergraduate students are over 28,000, academic staff, non-academic staff, petty traders, owners of small and medium scale business enterprises.¹⁴

This study employed a descriptive cross-sectional study design. Minimum sample size of 391 was determined using Cochran formula¹⁵ $n = z^2 p (1-p) / d^2$ where z = the standard normal deviate corresponding to 95% level of significance (1.96); p = the estimated proportion or overall prevalence of mental health disorders among undergraduate students in Nigeria (35.6%)¹⁶ = 0.356 and d = margin of error (0.05). This was adjusted to accommodate for 10% non-response.

A total of 391 undergraduate students who are registered for full time academic programmes in the University for the session were recruited using multistage sampling technique. Data on mental health status was collected online using a validated questionnaire, the Standardized Depression, Anxiety and Stress scale (DASS-21) on a 4-point Likert scale.¹⁷ Participants also provided information on their socio-demography.

Data analysis was done using Statistical Package for Social Sciences (SPSS) version 27.0. Descriptive statistics was done using proportions for categorical variables and means for continuous variables. Responses on the DASS-21 scale were scored as follows "Did not apply to me at all" = 0, "Applied to me some of the time" = 1, "Applied to me good part of the time" = 2, and "Applied to me most of the time" = 3. The total scores for depression, anxiety and stress subscales were obtained by adding up the scores for each



item in the sub-scales. These were classified into normal, mild, moderate, severe and extremely severe.¹⁸ Bivariate analysis was done using Chi square test. P was set at ≤ 0.05 .

Outcome variables

Depression: The scores for each participant was classified as normal (≤ 9 point), mild (10-13 points), moderate (14-20

Stress: The scores for each participant was classified as normal (≤ 14 point), mild (15-18 points), moderate (19-25

points), severe (21-27 points) and extremely severe as severe, (≥ 28 points).

Anxiety: The scores for each participant was classified as normal (≤ 7 point), mild (8-9 points), moderate (10-14 points), severe (15-19 points) and extremely severe as severe, (≥ 20 points)

points), severe (26-33 points) and extremely severe as severe, (≥ 34 point)

RESULTS

A total of 357 responses were received out of 391 giving a non-response rate of 8.7%.

Table 1 Sociodemographic characteristics of respondents

Variable	Frequency (n = 357)	Percentage (%)
Sex		
Female	240	67.2
Male	117	32.8
Faculty		
Clinical sciences	59	16.5
Law	21	5.9
Engineering	24	6.7
Sciences	85	23.8
Medical laboratory Sciences	17	4.8
Social science	10	2.8
Management science	17	4.8
Basic Medical Sciences	124	34.7
Level		
100	48	13.4
200	107	30.0
300	36	10.1
400	99	27.7
500	62	17.4
600	5	1.4
Place of residence		
On campus	145	40.6
Off campus	145	40.6
With parents	67	18.8

Table 1 shows that females were 240 (67.2%) while males were 117(32.8%). A total of 145 (40.6%) students stay off campus, another 145 (40.6%) stay on campus, while only 67 (18.8%) live with their parents and commute to the University.

Table 2: Pattern of Depression, Anxiety and Stress among respondents

Variables	Depression		Anxiety		Stress	
	Frequency (n = 357)	Percent	Frequency (n = 357)	Percent	Frequency (n = 357)	Percent
Normal	145	40.6	104	29.1	225	63.0
Mild	70	19.6	38	10.6	61	17.1
Moderate	86	24.1	103	28.9	39	10.9
Severe	29	8.1	41	11.5	24	6.7
Extremely severe	27	7.6	71	19.9	8	2.2

Table 2 shows that 253 (70.8%) had anxiety, 222 (59.4%) experienced depression, and 132 (37%) had Stress.

Table 3 shows that there is a statistically significant association between depression and place of residence ($P = 0.015$), faculty ($P = 0.005$), family history of mental illness ($P = 0.013$), financial difficulty ($P = 0.016$), social support ($P = 0.001$) and substance use ($P = 0.001$).

The place of residence ($P = 0.003$), use of substances ($P < 0.0001$), presence of adequate social support ($P = 0.001$) and Faculty of the respondents were predictors of depression among the respondents. Those who reside on campus are approximately three times less likely to experience depression compared to those residing with their parents ($OR = 0.318$; $95\% CI = 0.147 - 0.689$). Compared to respondents who sometimes use substances, those who do not are five times less likely to experience depression ($OR = 0.196$; $95\% CI = 0.077 - 0.497$). Furthermore, those without adequate social support are twice more likely to experience depression compared to those who sometimes have adequate social support ($OR = 2.224$; $95\% CI = 1.192 - 4.151$).

Table 4 shows that there is a statistically significant association between anxiety and place of residence ($P = 0.039$), faculty ($P = 0.034$) and having adequate social support ($P = 0.001$). It also shows that place of residence ($P = 0.037$), having adequate social support ($P < 0.001$) and faculty ($P = 0.04$) were predictors of anxiety disorder among the respondents. Those who reside on campus were 2.6 times less likely to develop anxiety disorders compared to those who reside with their parents ($OR = 0.388$; $95\% CI = 0.168 - 0.893$) and those who do not have adequate social support are 2.3 times more likely to develop anxiety disorders compared to those who occasionally have adequate social support ($OR = 2.25$; $95\% CI = 1.178 - 4.303$).



Table 3: Predictors of Depression among the respondents

Variable	Depression		X ²	P value	OR	P value	95% CI	
	Absent	Present					Lower	Upper
Sex								
Male	49	68	0.115	0.734	-	-	-	-
Female	96	144						
Place of residence								
With parents	17	50	8.640	0.015*	0.318	0.003*	0.147	0.689
On campus	67	78				0.004*		
Off campus	61	84				0.001*		
Faculty								
Sciences	35	50	20.51	0.005		0.002*		
Clinical science	35	24			0.977	0.958	0.418	2.285
BMS	36	88			3.014	0.002*	1.509	6.021
Engineering	12	12			1.105	0.850	0.392	3.120
Social Sciences	5	5			0.538	0.391	0.131	2.217
Management Sciences	6	11			1.653	0.410	0.501	5.454
MLS	10	7			0.392	0.154	0.108	1.423
Law	6	15			2.714	0.095	0.840	8.763
Family history of mental illness								
No	141	192	6.119	0.013*	2.680	0.103	0.818	8.781
Yes	4	20						
Experiencing financial difficulty								
Sometimes	66	97	8.320	0.016*	1.215	0.188	0.686	2.153
Yes	45	88				0.504		
No	34	27				0.153		
Adequate social support								
Sometimes	49	76	22.886	0.001*	0.628	0.001*	0.346	1.142
Yes	65	49				0.127		
No	31	87				0.012*		
Substance use								
Sometimes	7	30	14.712	0.001*	0.753	0.000	0.188	3.006
Yes	6	23				0.688		
No	132	159				0.001*		
Constant					9.200	0.000		

* P < 0.05 Statistically significant BMS: Basic Medical Sciences MLS: Medical Laboratory Sciences



Table 4: Predictors of Anxiety disorder among respondents

Variable	Depression		X ²	P value	OR	P value	95% CI	
	Absent	Present					Lower	Upper
Gender								
Male	49	68	0.115	0.734	-	-	-	-
Female	96	144						
Place of residence								
With parents	17	50				0.003*		
On campus	67	78	8.640	0.015*	0.318	0.004*	0.147	0.689
Off campus	61	84			0.301	0.001*	0.146	0.621
Faculty								
Sciences	35	50				0.002*		
Clinical science	35	24			0.977	0.958	0.418	2.285
BMS	36	88			3.014	0.002*	1.509	6.021
Engineering	12	12			1.105	0.850	0.392	3.120
Social Sciences	5	5	20.51	0.005	0.538	0.391	0.131	2.217
Management Sciences	6	11			1.653	0.410	0.501	5.454
MLS	10	7			0.392	0.154	0.108	1.423
Law	6	15			2.714	0.095	0.840	8.763
Family history of mental illness								
No	141	192	6.119	0.013*		1.000		
Yes	4	20			2.680	0.103	0.818	8.781
Experiencing financial difficulty								
Sometimes	66	97				0.188		
Yes	45	88	8.320	0.016*	1.215	0.504	0.686	2.153
No	34	27			0.602	0.153	0.300	1.208
Adequate social support								
Sometimes	49	76				0.001*		
Yes	65	49	22.886	0.001*	0.628	0.127	0.346	1.142
No	31	87			2.224	0.012*	1.192	4.151
Substance use								
Sometimes	7	30				0.000*		
Yes	6	23	14.712	0.001*	0.753	0.688	0.188	3.006
No	132	159			0.196	0.001*	0.077	0.497
Constant					9.200	0.000		

P < 0.05 Statistically significant; BMS: Basic Medical Sciences; MLS: Medical Laboratory Sciences

Table 5: Predictors of Stress Disorders among the respondents

Variable	Stress disorder		X ²	P value	OR	P value	95% CI	
	Absent	Present					Lower	Upper
Sex								
Male	77	40	0.580	0.446	-	-	-	-
Female	148	92						
Place of residence								
With parents	31	36	9.997	0.007*	0.439	0.004*		
On campus	96	49				0.007*	0.241	0.800
Off campus	98	47				0.001*	0.199	0.672
Family history of mental illness								
No	212	121	0.866	0.352	-	-	-	-
Yes	13	11						
Experiencing financial difficulty								
Sometimes	105	58	4.281	0.118	-	-	-	-
Yes	76	57						
No	44	17						
Adequate social support								
Sometimes	81	44	6.581	0.037*	0.814	0.019*		
Yes	80	34				0.467	0.467	1.417
No	64	54				0.039*	1.028	2.998
Substance use								
Sometimes	16	21	17.192	0.001*	1.117	0.000*		
Yes	11	18				0.831	0.403	3.100
No	198	93				0.291	0.001	0.141

Table 5 shows that there is a statistically significant association between stress disorder and place of residence ($P = 0.007$), social support ($P = 0.037$) and substance use ($P = 0.001$). It also shows that place of residence ($P = 0.004$), adequate social support ($P = 0.019$) and use of substances ($P = 0.000$) were predictors of stress among respondents. Those who reside off campus and on campus are approximately three times ($OR = 0.365$; $95\% CI = 0.199 - 0.672$) and two times ($OR = 0.439$; $95\% CI = 0.241 - 0.800$) respectively less likely to develop stress compared to those residing at home with their parents. Similarly, those without adequate social support are 1.7 times more likely to develop stress compared to those with occasional social support ($OR = 1.756$; $95\% CI = 1.028 - 2.998$) while those who do not use substances were approximately thrice less likely to experience stress compared to those who use substances sometimes ($OR = 0.291$; $95\% CI = 0.141 - 0.599$).



DISCUSSION

This study assessed the pattern and predictors of mental health disorders among undergraduate students in Rivers State University Port Harcourt. This study found that anxiety (70.8%) was the most common mental health disorder among undergraduate students in Rivers State University Port Harcourt followed by depression (59.4%) and stress (37%). This pattern of mental health disorders was also found in a study conducted among undergraduate pharmacy students from seven Universities in Nigeria where the prevalence of anxiety was reported as 63.5%, depression as 44.6 %, and stress as 35% respectively.¹⁹ These results from different geographical and cultural location in Nigeria show that the prevalence of mental health disorders among undergraduate students is high. This may be attributed to the economic downturn in the country which has made the cost of living among undergraduate students high. Furthermore, many students commute to school from their homes due to inadequate hostels for accommodation and this may add up to the harsh academic environment common in higher institutions and thus predispose the students to diverse forms of mental health disorders as observed by this study.

A 12-months period prevalence study on common mental health disorders among first year students in two South African Universities found a much lower prevalence 42.7% of their respondents. The lower prevalence may be due to their population who are first year students, yet to be exposed to the harsh academic climate of universities. However, the pattern of mental health disorder agrees with our finding with the commonest form being Generalized Anxiety Disorder (20.8%), followed by depression (13.6%), Alcohol use Disorder (5.6%), Drug Use Disorder (3.1%), and bipolar spectrum disorder (1.0%).²⁰ According to the World Health Organization report, anxiety disorders remain the most prevalent mental health disorder globally.²¹ Baklola et al (2023) found a high prevalence of mental health disorders in their study among students in 21 Egyptian universities. Psychological distress (68.1%) was the most common form of mental health disorder with female students more affected than their male counterparts.²² The higher preponderance of mental health disorders among females in their study may be attributed to differences in coping styles or hormonal changes during puberty. Furthermore, the academic pressure consistently faced by undergraduate students may likely instil some level of anxiety among them, thus contribute to anxiety as the most prevalent mental health disorder among undergraduate students.

This study found a statistically significant association between anxiety and place of residence and also lack of social support. Similarly, there was a statistically significant association between depression and place of residence, lack of social support, family history of mental illness, financial difficulty, and substance use. Furthermore, place of residence, lack of social support and substance use were associated with stress disorder. However, the study also found that only place of residence, substance use and having adequate social supports were predictors of mental health disorders among students. Undergraduate students who reside on campus were three times less likely to experience depression compared to those residing with their parents and those without adequate social support are twice more likely to experience depression compared to those who sometimes have adequate social support. The use of substances which is common among young people may also predispose them to mental health disorders. Compared to students who sometimes use substances, those who do not are five times less likely to experience depression. Furthermore, students who are resident on campus were 2.6 times less likely to develop anxiety disorders compared to those who reside with their parents and commute to school from home. Similarly, those who do not have adequate social support are 2.3 times more likely to develop anxiety disorders compared to those who occasionally have adequate social support.

Respondents who reside off campus and on campus are approximately three times and two times respectively less likely to develop stress compared to those residing at home with their parents. Similarly, those without adequate social support are 1.7 times more likely to develop stress compared to those with occasional social support while those who use substances were about three times less likely to have stress compared to occasional users. The findings of Al Marzouqi et al (2022) among undergraduate students in United Arab Emirates (UAE) agrees with our findings. The commonest mental health disorder was Anxiety disorder followed by Depression and Stress disorder.²² Other related studies in Ghana and Tanzania similarly reported that lack of social support, heavy alcohol consumption and traumatic experiences were predictors of mental health disorders.^{22, 23,24} Furthermore, gender, history of psychiatric follow-up, social isolation, and low quality of social relations have also been reported as predictors of mental health disorders among undergraduate students in France.²⁵

CONCLUSION

Anxiety disorder is the most common mental health disorder among undergraduate students in Rivers State University

Port Harcourt followed by depression and stress and the predictors of mental health disorder were place of residence, lack of social support and substance use.

The generalizability of findings in this study to other undergraduate students in Rivers State or elsewhere should be with caution for the following reasons.

1. Data collection was based on memory recall which is subject to recall bias and by the fact that data on
2. Mental health disorders were assessed with a screening tool instead of a diagnostic tool.
3. Social support and substance use were not assessed using standard questionnaires.

Conflict of Interest: The authors declare that there was no conflict of interest

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