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Psychological Health of Undergraduate Medical Students and Its Associated Factors in A Tertiary Institution, South-South, Nigeria.

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Abstract

Background: The World Health Organization (WHO) highlights that many mental health conditions first appear before 24 years of age. Thus, the undergraduate period is especially crucial for the psychological health of medical students as they are a vulnerable population. This study assessed the psychological health of undergraduate medical students and its associated factors in a tertiary institution in Nigeria.

Methods: A descriptive cross-sectional study was carried out from December, 2021 to February, 2023 among 611 undergraduate medical students in the School of Medicine, University of Benin, Nigeria, using stratified random sampling. Data were collected using a semi-structured self-administered questionnaire adapting the General Health Questionnaire (GHQ-28). Univariate and Bivariate analysis was done using IBM SPSS Statistics Version 25 software.

Results: Two-thirds of respondents were at increased risk of psychological ill-health, 402 (65.8%), having had a GHQ-28 score of 4 and above. A statistically significant relationship was also found between course satisfaction and psychological health as majority 134 (74.0%) of respondents who were dissatisfied were at increased risk of psychological ill-health (p-value = 0.005).

Conclusion: The risk of psychological ill-health was high among undergraduate medical students. Various sociodemographic, socioeconomic and academic factors influenced their risk of psychological ill-health. Consequently, fostering the psychological health of medical students becomes an imperative, directly cultivating a resilient and effective future healthcare workforce.

Keywords: Psychological Health, Associated Factors, Medical students, Nigeria.

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INTRODUCTION

Globally, it has been estimated that one in seven 10-19-year-olds experiences a mental disorder.[1] This accounts for 15% of the global burden of disease in this age group, with suicide being the third leading cause of death among those aged 15–29 years old.[1]

The university education phase is an exciting time for most youth. It can however be associated with considerable hurdles including; long hours of study, irregular sleep patterns, academic pressures, financial pressures, and living away from home for the first time. These can predispose to or exacerbate psychological disorders such as depression, anxiety disorders, eating disorders, and substance use disorders.[2]

Several studies have shown that undergraduate medical students develop poor psychological health during medical training, compared with non-medical peers.[3,4] It has also been suggested that psychological health worsens after students begin medical school and remains poor throughout the training.[5,6] In many medical schools, the environment provides an authoritarian and rigid system, which encourages competition rather than cooperation between learners.[7]

Medical students are exposed to many challenges, such as demanding coursework, financial debt, lack of sleep, limited control over their schedules, frequent exposure to illness and death, and mistreatment during training.[8] These struggles change over time, becoming more prominent during key transitions in their education, such as at the start of medical school, when moving from classroom learning to clinical training, and during preparation for residency. Therefore, the stress spans throughout the undergraduate period and often continues during internship, post graduate study period and later into the physician's practical life.[7]

Various studies have shown a high frequency of psychological symptoms associated with university education and stress has been demonstrated as one of the prevalent contributors.[9,10] Stress in medical school is likely to predict psychological health problems in future but students rarely seek help for their problems.[7] Although some degree of stress is a normal part of medical training and can be a motivator for some individuals, it is not seen as constructive by all students. For many individuals, stress results in feelings of fear, incompetence, and guilt and can be associated with both psychological and physical morbidity.[11]

A one-year prospective study was carried out on undergraduate first year medical students at Universiti Sains Malaysia.[12] It demonstrated that prior to medical training, the psychological health of undergraduate medical students resembled that of the general population. Their psychological health was seen to deteriorate throughout the first year of medical training. This study supports views that medical training is not an optimal environment to psychological health of medical students.

A cross-sectional study was conducted among 410 undergraduate medical students of the College of Medical Sciences, University of Benin, Benin City.[13] It aimed to investigate the level of course satisfaction, its relationship to psychological disorder and presence/absence of stress among the students. The General Health Questionnaire-28 (GHQ-28) was used to assess their psychological health. The study population comprised the Year 2 to Year 6 medical students. From the results, 112 (29.1%) respondents had psychological disorder and 273 (70.9%) did not have psychological disorder. Of the 244 satisfied respondents, 25.0% had psychological disorder, while 75.0% did not. Of the 57 dissatisfied respondents, 42.1% had psychological disorder, while 57.9% did not. Eighty-four respondents were undecided about the medical course, 32.1% of them had psychological disorder, while 67.9% of them did not have. About thirty five percent (35.1%) of the 200 level, 22.4% of the 300 level and 35.6% of the 400 level, 28.6% of the 500 level and 18.6% of the 600 level medical students had psychological disorder.

A descriptive cross-sectional survey among 451 randomly selected medical students from the pre-clinical and clinical levels of study in the University of Calabar, Cross River State, Nigeria was conducted.[14] It aimed to assess the prevalence of mental health of medical students in the university. The mean age of the respondents was 23.4 ± 4.3 years. Based on the GHQ-12 categorisation, 39.2% had a poor mental health status, while 60.8% had good mental health status. The factors significantly associated with poor mental health were-recent experience of mistreatment by trainers or colleagues, perceived inadequate monthly allowance and the perception that medical training is stressful ($p < 0.05$). The mean score attained was 2.35 + 2.29. Most of the responses of the GHQ were positive by majority of the students except losing much sleep over worry

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(76.1%), feeling of being unable to overcome difficulties (83.8%) and feeling constantly under strain (59.2%). In addition, 90.2% lost confidence in themselves, 95.6% thought of themselves as worthless and 78.5% felt unhappy and depressed. Most respondents reportedly faced up to their problems (88.7%), 83.4% felt reasonably happy and 64.7% indicated that they enjoyed their daily activities.

This study aims to assess the presence of psychological ill-health among undergraduate medical students in a south-south tertiary university in Nigeria, the factors influencing their psychological health status as well as the relationship between course satisfaction and psychological ill-health status.

METHODOLOGY

Study Setting

The study was conducted at the School of Medicine, College of Medical Sciences, University of Benin, Benin City, Edo State, Nigeria, between December 2021 and February 2023.

Study Design

A descriptive cross-sectional study design was employed.

Study Population

The study population comprised undergraduate medical students in Years 2 to 6. Eligibility required completion of at least one academic session. Students with a diagnosed mental health disorder or those working full-time and studying were excluded**.**

Sample Size Determination

The sample size was calculated using Cochran's formula,[15] assuming a prevalence of 60.8% from a similar study among students at the University of Calabar,[14] a 10% non-response rate,[16] and a design effect of 1.5.[17] The final required sample size was 611 participants.

Sampling Methodology

There was a total of 801 eligible students. A sampling fraction of 0.76 was applied to ensure proportional representation across class levels. Stratified sampling was performed by year of study, followed by systematic random sampling with an interval of one (1). The first respondent in each stratum was randomly selected from the class list.

Study Variables

The primary outcome (dependent) variable was psychological health status, assessed as "distressed" or "not distressed" using the General Health Questionnaire-28 (GHQ-28).[8-21] Independent variables included sociodemographic (age, sex, marital status etc), socioeconomic (family level of income, parental education, monthly allowance etc) and academic factors (year of study, academic performance etc).

Study Tools/Data Collection

Data were collected using a semi-structured, self-administered questionnaire, which included the GHQ-28.[8-21] The GHQ-28 was developed and introduced as a screening tool to detect those likely to have or to be at risk of developing psychiatric disorders. The GHQ-28 is a 28-item measure of the common mental health problems, including somatic symptoms (items 1–7), anxiety/insomnia (items 8–14), social dysfunctions (items 15–21), and severe depression (items 22–28). Each item had four response options: "not at all," "no more than usual," "rather more than usual," and "much more than usual." Participants selected the option that best described their situation. Scoring followed the bimodal method (0-0-1-1), with a total score ≥4 indicating psychological ill-health.

The level of course satisfaction was determined based on the response to options given including very satisfied, satisfied, undecided, dissatisfied and very dissatisfied. The association between course satisfaction and psychological health was then determined.

Data Analysis

IBM Statistical Product and Service Solutions (IBM SPSS) was used for data analysis. Descriptive statistics (frequency and percentages) summarized the data. Univariate analysis estimated the prevalence of psychological ill-health, while bivariate analysis assessed associations between psychological health and explanatory variables. Significance was set at $p < 0.05$ with 95% confidence intervals. Results were presented in prose, tables, and charts.

Ethics/Permission

Ethical approval was obtained from the University of Benin Teaching Hospital Ethical Committee. Verbal informed consent was obtained from each participant while assuring confidentiality, voluntary participation, and the right to withdraw without consequences.

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Table 1: frequency of occurrence of GHQ-28 components among respondents

Variable	Frequency of Occurrence (n = 611)			
	Not at all (%)	No more than usual (%)	Rather more than usual (%)	Much more than usual (%)
Been feeling perfectly well and in good health	51(8.3)	343 (56.1)	124 (20.3)	93 (15.2)
Been feeling in need of a good tonic	261 (42.7)	207 (33.9)	111 (18.2)	32 (5.2)
Been feeling down and out of sorts	214 (35.0)	222 (36.3)	129 (21.1)	46 (7.5)
Felt that you are ill	281 (46.0)	195 (31.9)	106 (17.3)	29 (4.7)
Been getting any pains in your head	300 (49.1)	158 (25.9)	121 (19.8)	32 (5.2)
Been getting a feeling of tightness or pressure in your head	341 (55.8)	145 (23.7)	96 (15.7)	29 (4.7)
Been having hot or cold spells	425 (69.6)	123 (20.1)	51 (8.3)	12 (2.0)
Lost much sleep over worry	329 (53.8)	157 (25.7)	89 (14.6)	36 (5.9)
Had difficulty staying asleep once you are off	378 (61.9)	134 (21.9)	70 (11.5)	29 (4.7)
Felt constantly under strain	220 (36.0)	186 (30.4)	148 (24.2)	57 (9.3)
Been getting edgy and bad-tempered	301 (49.3)	176 (28.8)	100 (16.4)	34 (5.6)
Been getting scared or panicky for no good reason	303 (49.6)	168 (27.5)	100 (16.4)	40 (6.5)
Found everything getting on top of you	276 (45.2)	181 (29.6)	113 (18.5)	41 (6.7)
Been feeling nervous and strung-up all the time	285 (46.6)	181 (29.6)	107 (17.5)	38 (6.2)
Been managing to keep yourself busy and occupied	214 (35.0)	215 (35.2)	139 (22.8)	43 (7.0)
Been taking longer over the things you do	244 (39.9)	194 (31.8)	132 (21.6)	41 (6.7)
Felt on the whole that you were doing things well	121 (19.8)	297 (48.6)	143 (23.4)	50 (8.2)
Been satisfied with the way that you have carried out your task	127 (20.8)	298 (48.8)	137 (22.4)	49 (8.0)
Felt that you are playing a useful part in things	87 (14.2)	288 (47.1)	163 (26.7)	73 (11.9)
Felt capable of making decisions about things	56 (9.2)	299 (48.9)	174 (28.5)	82 (13.4)
Been able to enjoy your normal day to day activities	80 (13.1)	321 (52.5)	140 (22.9)	70 (11.5)
Been thinking of yourself as a worthless person	439 (71.8)	101 (16.5)	45 (7.4)	26 (4.3)
Felt that life is entirely hopeless	454 (74.3)	88 (14.4)	48 (7.9)	21 (3.4)
Felt that life isn't worth living	469 (76.8)	94 (15.4)	28 (4.6)	20 (3.3)
Thought of the possibility that you might make away with yourself	455 (74.5)	103 (16.9)	38 (6.2)	15 (2.5)
Found at times you could not do anything because your nerves were too bad	372 (60.9)	154 (25.2)	62 (10.1)	23 (3.8)
Found yourself wishing you were dead and away from it all	474 (77.6)	81 (13.3)	36 (5.9)	20 (3.3)
Found that the idea of taking your own life kept coming into your mind	488 (79.9)	76 (12.4)	28 (4.6)	19 (3.1)

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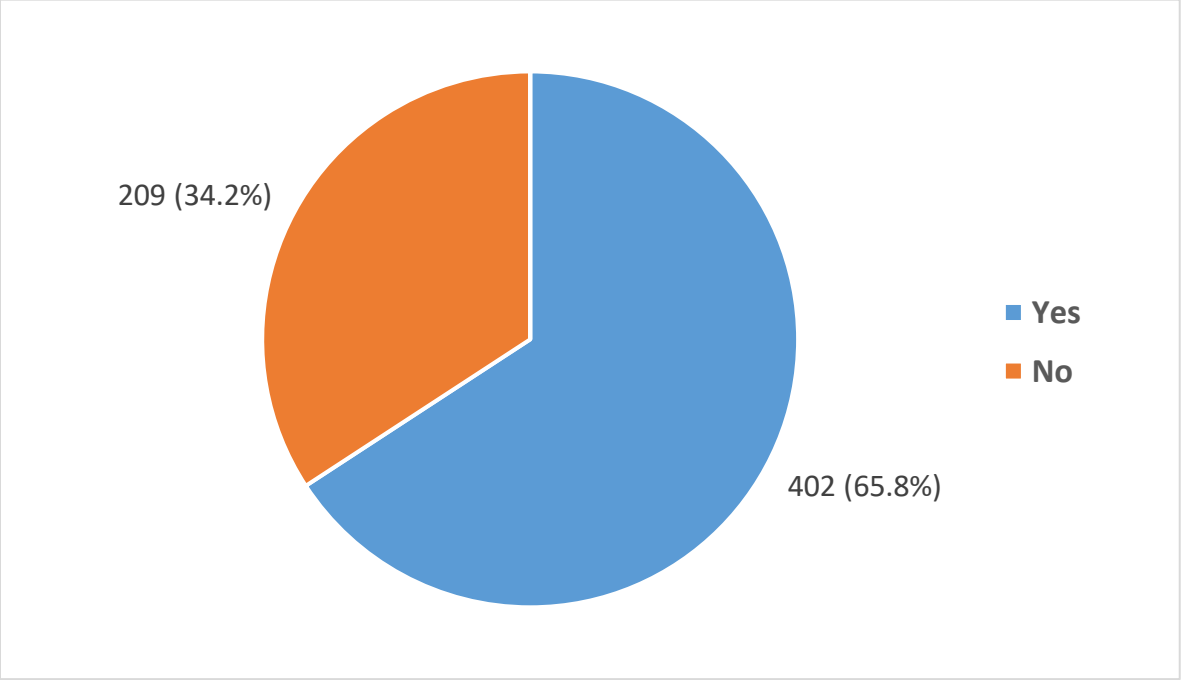

Figure 1: Presence of Increased Risk of Psychological Ill-Health among Undergraduate Medical Students in the University of Benin

A total GHQ-28 score ≥4 indicates psychological ill-health.
The mean GHQ-28 score was 6.3, with a standard deviation of ± 5.4
About two-thirds of respondents were at increased risk of psychological ill-health 402 (65.8%), having had a GHQ-28 score of 4 and above.

Table 2: Sociodemographic characteristics of respondents and psychological health

Variable	Increased risk of psychological ill-health (n = 611)		Total Frequency (%)	Test statistic	p-value
	Yes Freq (%)	No Freq (%)			
Age group (years)				**Fisher's Exact Test = 7.055**	**0.116**
≤ 20	37 (27.2)	99 (72.8)	136 (22.3)		
21-25	135 (37.3)	227 (62.7)	362 (59.2)		
26-30	31 (30.7)	70 (69.3)	101(16.5)		
31-35	4 (44.4)	5 (55.6)	9 (1.5)		
>35	2 (66.7)	1 (33.3)	3 (0.5)		
Sex				**χ^2 = 0.181**	**0.671**
Male	212 (65.0)	114 (35.0)	326 (53.4)		
Female	190 (66.7)	95 (33.3)	285 (46.6)		
Religion				**Fisher's Exact Test = 4.515**	**0.478**
Christianity	391 (65.9)	202 (34.1)	593 (97.1)		
Islam	7 (63.6)	4 (36.4)	11 (1.8)		

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Others*	4 (57.1)	3 (42.9)	7 (1.1)		
Marital Status				**Fisher's Exact Test = 4.580**	**0.141**
Single	395 (66.3)	201 (33.7)	596 (97.5)		
Married	7 (53.8)	6 (46.2)	13 (13.0)		
Divorced	0 (0.0)	1 (100.0)	1 (1.0)		
Widowed	0 (0.0)	1 (100.0)	1 (1.0)		
Place of Residence				**Fisher's Exact Test = 20.010**	**0.020**
Clinical Hostel	118 (61.8)	73 (38.2)	191 (31.3)		
Rented Accommodation	122 (68.9)	55 (31.1)	177 (29.0)		
NDDC Hostel	115 (66.9)	57 (33.1)	172 (28.2)		
Parents' Home	22 (68.8)	10 (31.2)	32 (5.2)		
School Halls of Residence	21 (67.7)	10 (32.3)	31 (5.1)		
Others**	4 (50.0)	4 (50.0)	8 (1.3)		
Family Size				**$\chi^2 = 1.219$**	**0.270**
6 and below	269 (64.4)	149 (35.6)	418 (68.4)		
Above 6	133 (68.9)	60 (31.1)	193 (31.6)		

*: African Traditional Religion, Atheist, Irreligious, None
**: Keystone hostel, With a friend

Table 2 shows the relationship between psychological health and sociodemographic characteristics.
Six hundred and eleven undergraduate medical students participated in this study with a mean age of 22.9 years ± 3.1 years. A little above half were male 326 (53.4%) and most medical undergraduates were Christian and single (593 (97.1%); 596 (97.5%) respectively). About one-thirds stayed in Clinical hostel 191 (31.3%) while about a quarter stayed in NDDC hostel 172 (28.2%) and rented accommodation 177 (29.0%). Four hundred and eighteen (68.4%) respondents had a family size of 6 and below with a mean family size of 6.0 and standard deviation of ± 1.8.
Respondents in the age group above 35 years were at an increased risk of psychological ill-health 2 (66.7%) while those in the age group of 20 years and below had the least risk of psychological ill-health 37 (27.2%). However, the relationship between these variables was not statistically significant (p-value = 0.116)
Females, Christians and single individuals were shown to be at a higher risk of psychological ill-health (190 (66.7%), 391 (65.9%) and 395 (66.3%) respectively). This relationship was also not statistically significant. (p-values = 0.671, 0.478 and 0.141 respectively).
Students living in the Clinical hostel were seen to have a higher risk of developing psychological ill-health 118 (61.8%). The relationship between place of residence and psychological health was statistically significant **(p-value = 0.020)**.

Table 3: Socio-economic characteristics of respondents and psychological health

Variable	**Increased risk of psychological ill-health (n = 611)**		**Total Frequency (%)**	**Test Statistic**	**p-value**
	Yes Freq (%)	**No Freq (%)**			
Family level of income				**$\chi^2 = 0.125$**	**0.723**
Satisfactory	283 (65.4)	150 (34.6)	433 (70.9)		
Unsatisfactory	119 (66.9)	59 (33.1)	178 (29.1)		
Fathers' Level of Education				**$\chi^2 = 2.930$**	**0.403**
No Formal Education	4 (50.0)	4 (50.0)	8 (1.3)		
Primary	24 (61.5)	15 (38.5)	39 (6.4)		
Secondary	65 (72.2)	25 (27.8)	90 (14.7)		
Tertiary	309 (65.2)	165 (34.8)	474 (77.6)		
Mothers' Level of Education				**$\chi^2 = 1.911$**	**0.591**
No Formal Education	9 (69.2)	4 (30.8)	13 (2.1)		
Primary	21 (65.6)	11 (34.4)	32 (5.2)		

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Secondary	77 (71.3)	31(28.7)	108 (17.7)		
Tertiary	295 (64.4)	163 (35.6)	458 (75.0)		
Source of Funding\Parents or Guardian				**χ^2 = 3.351**	**0.067**
Yes	378 (66.8)	188 (33.2)	566 (92.6)		
No	24 (53.3)	21 (46.7)	45 (7.4)		
Source of Funding\Self				**χ^2 = 0.007**	**0.933**
Yes	109 (66.0)	56 (34,0)	165 (27.0)		
No	293 (65.7)	153 (34.3)	446 (73.0)		
Source of Funding\Scholarship				**χ^2 = 0.521**	**0.470**
Yes	93 (68.4)	43 (31.6)	136 (22.3)		
No	309 (65.1)	166 (34.9)	475 (77.7)		
Source of Funding\Friends				**χ^2 = 0.163**	**0.687**
Yes	20 (2.5)	12 (37.5)	32 (5.2)		
No	382 (66.0)	197 (34.0)	579 (94.8)		
Source of Funding\Others*				**χ^2 = 0.898**	**0.343**
Yes	4 (50.0)	4 (50.0)	8 (1.3)		
No	398 (66.0)	205 (34.0)	603 (98.7)		
Monthly Allowance (₦)				**χ^2 = 6.624**	**0.578**
No Allowance	40 (74.1)	14 (25.9)	54 (8.8)		
< 10,000	30 (66.7)	15 (33.3)	45 (7.4)		
10,000-19,999	46 (65.7)	24 (34.3)	70 (11.5)		
20,000-29,999	79 (58.5)	56 (41.5)	135 (22.1)		
30,000-39,999	63 (64.3)	35 (35.7)	98 (16.0)		
40,000-49,999	46 (68.7)	21 (31.3)	67 (11.0)		
50,000-59,999	40 (69.0)	18 (31.0)	58 (9.5)		
≥ 60,000	33 (73.3)	12 (26.7)	45 (7.4)		
Variable Allowance	25 (64.1)	14 (35.9)	39 (6.4)		

***:** Church, Relatives, Sponsor

Table 3 shows that majority of the respondents had a satisfactory family level of income 433 (70.9%). A higher proportion of students' fathers and mothers had tertiary level of education (474 (77.6%) and 458 (75.0%) respectively), with no formal education constituting the least proportion for both groups (8 (1.3%) and 13 (2.1%) respectively).

The most common sources of funding were parents (92.6%) and self (27.0%), while the less common sources of funding were friends (5.2%) and others (1.3%). About one quarter of the respondents had a monthly allowance of ₦20,000 - ₦29,999, while 8.8% received no allowance at all and 6.4% did not receive a fixed allowance.

The respondents with a family size of above 6, were at an increased risk of developing psychological ill-health 133 (68.9%). This relationship was not however statistically significant (p-value = 0.270).

Students with unsatisfactory family level of income 119 (66.9%) and those whose parents had secondary level of education were more likely to be at increased risk of psychological ill-health (72.2 %; father and 71.3%; mother). Those who were self-funded 109 (66.0%) were more likely to develop psychological disorder than those who were not 293 (65.7%).

Undergraduate medical students who received no allowance were at the highest risk of psychological ill-health (74.1%), while those with allowance of ₦20,000 - ₦29,999 had the least risk of psychological ill health (58.5%). This relationship was not statistically significant (p-value = 0.578).

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Table 4: Academic characteristics of respondents and psychological health

Variable	Increased risk of psychological ill-health (n = 611)		Total Frequency (%)	Test Statistic	p-value
	Yes Freq (%)	No Freq (%)			
Current Year of Study				**$\chi^2 = 5.855$**	**0.210**
200 Level	80 (68.4)	37 (31.6)	117 (19.1)		
300 Level	86 (73.5)	31 (26.5)	117 (19.1)		
400 Level	136 (61.5)	85 (38.5)	221 36.2)		
500 Level	59 (66.3)	30 (33.7)	89 (14.6)		
600 Level	41 (61.2)	26 (38.8)	67 (11.0)		
Current Posting				**$\chi^2 = 6.249$**	**0.283**
Preclinical	166 (70.9)	68 (29.1)	234 (38.3)		
Block Posting	85 (62.5)	51 (37.5)	136 (22.3)		
Introductory Posting	51 (60.0)	34 (40.0)	85 (13.9)		
Senior Posting	41 (61.2)	26 (38.8)	67 (11.0)		
Subspecialty Posting	29 (61.7)	18 (38.3)	47 (7.7)		
Junior Posting	30 (71.4)	12 (28.6)	42 (6.9)		
Self-Reported Academic Performance				**$\chi^2 = 2.711$**	**0.100**
Satisfactory	295 (64.0)	166 (36.0)	461 (75.5)		
Unsatisfactory	107 (71.3)	43 (28.7)	150 (24.5)		
Affordability of Study Materials/Equipment				**$\chi^2 = 6.964$**	**0.008**
Affordable	233 (61.8)	144 (38.2)	377 (61.7)		
Not Affordable	169 (72.2)	65 (27.8)	234 (38.3)		
Number of Exams Failed				**Fisher's exact test = 0.867**	**0.901**
0	334 (66.1)	171 (33.9)	505 (82.7)		
1	52 (63.4)	30 (36.6)	82 (13.4)		
2	15 (68.2)	7 (31.8)	22 (3.6)		
≥ 3	1 (50.0)	1 (50.0)	2 (0.3)		

Table 4 shows the academic characteristics of the respondents. More than one-thirds of the respondents were in the preclinical class 234 (38.3%). Majority of respondents reported a satisfactory academic performance 461 (75.5%) and more than half were able to afford the required school equipment and materials 377 (61.7%). Most respondents had never failed an examination 505 (82.7%), 82 (13.4%) had failed one examination and 2 (0.3%) had failed three or more examinations. Majority of students in 300 level and junior posting were seen to be more likely to be at an increased risk of psychological ill health (86 (73.5%); 30 (71.4%) respectively), while those in 600 level and introductory posting were seen to have the least risk of psychological ill-health 41 (61.2%); 51 (60.0%) respectively). Respondents with unsatisfactory academic performance were more likely to be at increased risk of psychological disorder 107 (71.3%) while more than one-thirds of those with satisfactory academic performance had no increased risk 166 (36.0%). The relationship between academic performance and psychological health was statistically significant **(p-value = 0.008)**. Students who had failed two exams had the most risk of developing psychological ill-health 15 (68.2%).

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Table 5: Course satisfaction among undergraduate medical students and psychological health

Course Satisfaction	Increased risk of psychological ill-health (n = 611)		χ^2	p-value
	Yes Freq (%)	No Freq (%)		
Satisfied/Very Satisfied	214 (64.5)	118 (35.5)	**10.701**	**0.005**
Undecided	54 (55.1)	44 (44.9)		
Dissatisfied/Very Dissatisfied	134 (74.0)	47 (26.0)		

Two hundred and fourteen (64.5%) respondents who were satisfied with the course were at increased risk of psychological ill-health, majority of those who were dissatisfied were at increased risk of psychological ill-health 134 (74.0%) while more than half of the undecided students 54 (55.1%) were at increased risk of psychological ill-health.
The relationship between course satisfaction and psychological ill-health was found to be statistically significant **(p-value = 0.005)**.

DISCUSSION

The mean ± SD GHQ-28 score of the respondents was 6.3 ± 5.4. About two-thirds of medical students were at risk of psychological ill-health. Significant predictors were place of residence (clinical hostel), academic performance, and course satisfaction. Other factors such as age >35 years, female gender, larger family size, poor income, lack of allowance, and lower parental education showed higher risk trends but were not statistically significant. Third year students and those in junior postings had the highest risk, while sixth year students had the lowest. Students who reported unsatisfactory performance were more likely to have psychological ill-health and the risk increased with exam failure, especially for students who had failed two exams. Psychological ill-health was seen to be significantly higher among students dissatisfied with the course compared to satisfied or undecided peers.

Majority of the students were at risk of psychological ill-health. This result is similar to that of a cross-sectional study carried out to assess the mental health of Iranian medical students. It showed that more than half of the students (54.4%) had a total GHQ-28 score above the cut-off point considered as probably abnormal mental health status.[22] This finding however differs from that of a descriptive cross-sectional survey of 451 randomly selected medical students from the pre-clinical and clinical levels of study in Calabar where 39.2% had a poor mental status compared to 60.8% with good mental health status.[14]

Students above 35 years had the highest risk of developing a psychological disorder. This may be explained by the amount of stress they are exposed to as they are more likely to have side jobs and fund their education themselves. Females, Christians and single students also had the highest risk of psychological disorder. This finding is similar to that of a study carried out in Isfahan University of Medical Sciences, Isfahan, Iran in which psychological disturbance was more frequent in females and single people than males and married people respectively.[6] It was however in contrast to that of a cross-sectional study carried out in Iran where a higher proportion of males compared to the females scored above the cutoff point and so, were categorized as abnormal mental status.[22]

Students with unsatisfactory family income and no allowance had a higher risk of psychological ill-health. This is attributable to the fact that students facing financial hardship often experience persistent worry about meeting basic needs (food, housing, tuition, books), paying bills, and accumulating debt. This finding is similar to that of a study conducted in an Iranian medical school where the lowest socioeconomic group had higher mean scores of total GHQ compared to moderate and high socioeconomic status.[22]

Students in 300 level had the highest risk of developing psychological ill-health. This can be explained by the fact that they are preparing for their second professional MBBS examinations and they are under a lot of pressure. This finding is similar to that of a cross-sectional study carried out among undergraduate medical students in Iran, where the results showed that third- and fourth-year students had a higher mean GHQ-28 score compared to second year students.[22]

Majority of students who were dissatisfied/very dissatisfied with their course were at increased risk of psychological ill-health as compared with those who were satisfied/very satisfied. This finding is similar to

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that carried out in Shiraz University of Medical Sciences, Shiraz, Iran where a higher proportion of students with low satisfaction from their field of study had abnormal total GHQ score compared with the ones with high satisfaction (p-value = <0.001).[22] It is also in tandem with a previous study carried out among medical students in the University of Benin which showed that respondents who were dissatisfied with their course had the highest proportion of psychological disorder.[13]

Limitation of the study

The use of self-reports is a limitation of this study. However, a validated standardized instrument was used.

Implications of the study

The high prevalence of psychological ill-health among medical students underscores the urgent need for institutional policies that integrate routine psychological health screening and establishment of student wellness programs as part of accreditation standards by regulatory bodies such as the National Universities Commission (NUC) and Medical and Dental Council of Nigeria (MDCN).

In practice, universities should strengthen early identification through routine psychological health screening during registration and annually and provision of student-friendly and confidential counseling services. Stress management and resilience-building interventions should also be provided while training staff to recognize and respond to student distress. Addressing course dissatisfaction through periodic curriculum review and student feedback mechanisms could further reduce risk. Future research should adopt longitudinal designs to track changes across different years of study, test the effectiveness of targeted interventions, and expand to multiple institutions to allow for broader generalizability.

CONCLUSION

Majority of undergraduate medical students in the University of Benin were at increased risk of psychological ill-health much like their counterparts in other universities. This study also showed that the students' level of course satisfaction is closely linked to their psychological health. This correlation could impact on the future healthcare workforce, healthcare costs and patient care and if this goes unchecked, it may result in outcomes that weaken the healthcare delivery system in general.

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