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ORIGINAL ARTICLE

Stressors and Coping Mechanisms Employed by Undergraduate Medical Students in a Nigerian University

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Keywords

Stressors,

Coping strategies,

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ABSTRACT

Background: Medical education, characterized by intense stress, is rated as one of the most difficult trainings. This stress can be associated with consequences such as impaired academic performance and medical errors. The study assessed stressors medical students in a Nigerian tertiary institution are exposed to and their coping strategies.

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 a stratified random sampling technique. Data were collected using a semi-structured self-administered questionnaire adopting the brief Coping Orientation to Problems Experienced (brief COPE) and the Patient Health Questionnaire-4 (PHQ-4). Analysis was done using IBM SPSS Statistics Version 25 software, determining the frequency of occurrence of each stressor using univariate analysis and calculating the mean and standard deviation of each coping strategy to determine the least and most used ones. Ethical clearance was obtained for the study.

Results: The mean age of the respondents was 22.9 (SD ± 3.1) years, 326 (53.4%) were males while 285 (46.6%) were females. They were exposed to a myriad of academic, environmental, psychosocial and health-related stressors with the presence of complications of stress (depression; 17.0% and anxiety; 22.3%). Adaptive coping strategies most often employed were planning (5.01±1.90) active coping (4.99 ± 1.81) and religion (4.77± 2.07).

Conclusion: The undergraduate medical students are exposed to various stressors. A significant number of them had depression and anxiety. Continuous use of adaptive coping strategies will mitigate the harmful consequences of stress.

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INTRODUCTION

Stressors promote the release of stress hormones such as cortisol and adrenaline by activating the hypothalamic-pituitary-adrenal gland (HPA) axis.[1] They also cause a flight or fight response.[1] There are two broad categories of stressors posed by the internal and external environment. These include psychological and physiological (or

physical) stressors.[2] Physiological stressors (extreme temperatures, injury, pain, or hunger) cause an unpleasant sensory, emotional and subjective experience associated with potential damage of body tissue and bodily threat.[1] Psychological stressors (conflicts, new or increasing responsibilities, financial strain and traumatic incidents) are social and environmental circumstances that challenge the adaptive capabilities and resources of an organism.[3]

Scientists have also proposed another division of stressors into absolute and relative stressors.[2] Absolute stressors can also be called objective stressors. They are the stressors that everyone exposed to would interpret as being stressful in the negative sense of the word.[2,4] Relative stressors are subjective because only some individuals exposed to them would interpret them as stressful. Absolute stressors are phenomena such as natural disasters, earthquakes and tsunamis, while relative stressors include work pressure, public speaking, tests or examinations.[4]

Medical students deal with different stressors such as intense academic demands and workloads, challenging learning environments, personal life events and psychological pressures that are difficult to cope with. They are also faced with complex medical procedures, sleep deprivation, financial concerns, exposure to diseases, and death of patients. Stress has been seen to be a matter of personal perception as shown by medical students who are usually highly motivated and action oriented.[5] However, a previous study has shown that they are mostly incapable of tolerating feelings of helplessness and are less capable of handling stress.[6]

In a study among medical students in Ibadan, academic workload was found to be the major cause of stress (73.7%).[7] This was followed by school environment (22.1%) and ward rounds (21.1%).[7] Another study done to identify stressors and reactions to stressors among university students in Jordan showed that the most prevalent group of stressors experienced by the students were those related to 'self-imposed' stressors.[8] Examples of such stressors were 'I like to compete and win' and 'I like to be noticed and be loved by all'.[8] These stressors can be associated with severe consequences including, lack of empathy towards patients and colleagues, impaired academic performance and medical errors, loss of memory, poor relationships with peers and family members, sleep disorders, depression and in extreme situations, suicidal ideations and attempts.[9]

Coping is a conscious effort to regulate one's emotions, thoughts and behaviours in response to stress.[5] There are two main types of coping strategies - adaptive (active) or maladaptive (passive or avoidant).[5] Adaptive coping involves flexible approaches to solving problems and/or managing their related emotions through strategizing, reappraisal and emotional regulation and expression. Maladaptive coping involves behaviours that are less constructive, fruitful and avoidant such as ruminating, venting, confrontation, abandonment, social isolation and suppressing one's emotions.[5]

Coping strategies have also been grouped by psychologists into appraisal-focused, problem-focused and emotion-focused.[10] Appraisal-focused strategies involve modifying thought processes associated with stress by either approaching the problem differently or altering their goals and values. Problem-focused strategies, on the other hand, deal with the stressor by attempting to change or eliminate the source of stress by researching the problem and acquiring the necessary management skills. Emotion-focused strategies deal with the feelings associated with the stressor by modifying emotions through relaxation or distracting themselves. Typically, people employ a mixture of these three strategies when attempting to cope with stress.[10]

Coping requires access to various resources ranging from personal strengths to social support. Students use various coping strategies, which vary by year in training and source of stress. The specific coping strategies used may determine the overall effect of stress on psychological and physical health and whether stress has a positive or negative influence on them.[11] To overcome school-related challenges, many students sometimes go off the rail. Some suffer from substance abuse, internet addiction and excessive eating.[12]

A survey carried out in Ghana showed that planning and positive reinterpretation and growth were the two most predominant strategies for problem-focused and emotion-focused coping styles, respectively.[13]

Stress is an everyday reality that everyone experiences regardless of gender, age, religion or race. This research is based on the hypothesis that medical programs are strenuous, thus exposing medical students to excessive amounts of stress, which could adversely affect their psychological health. Therefore, the objective of this study is to assess the types of stressors undergraduate medical students in a tertiary institution in Edo State, Nigeria, are exposed to and the coping strategies they employ in mitigating these complications.

METHODOLOGY

The study was a descriptive cross-sectional study carried out among undergraduate medical students in Years 2 to 6 in a medical college in Edo State, Nigeria, which runs a Bachelor of Medicine and Bachelor of Surgery (MBBS) full-time degree program.[14] The study was carried out between December 2021 and February 2023. Students with a previous diagnosis of mental health disorder or simultaneously working and studying were excluded. Students must have spent at least one academic session in the university to be included.

Table 1: Sociodemographic Characteristics of Respondents

Variable	Frequency (n=611)	Percent
Age group (years)		
≤ 20	136	22.3
21-25	362	59.2
26-30	101	16.5
31-35	9	1.5
>35	3	0.5
Mean ± SD: 22.9 ± 3.1 years		
Sex		
Male	326	53.4
Female	285	46.6
Religion		
Christianity	593	97.1
Islam	11	1.8
Others*	7	1.1
Marital Status		
Single	596	97.5
Married	13	13.0
Divorced	1	1.0
Widowed	1	1.0
Place of Residence		
School Hostel	394	64.5
Outside School Accommodation	217	35.5
Monthly Allowance (₦)		
< 30,000	304	49.8
≥ 30,000	307	50.2

*: African Traditional Religion, Atheist, Irreligious, None

The minimum sample size was calculated using the Cochran formula,[15] taking into consideration a prevalence of 60.8%,[16] a 10% non-response rate[17] and a design effect of 1.5. Six hundred and eleven (611) respondents were selected using a stratified sampling technique. The students were stratified based on the class level and the population that fit into the selection criteria was 801. Using the same sampling fraction (0.76), the number of students per stratum was selected (proportional allocation) and individuals were selected from each stratum using a systematic random sampling method using a calculated sampling interval of one (1). The first respondent was selected from the class list using a table of random numbers. The data required for the study was collected with the aid of a semi-structured self-administered questionnaire.

A list of 39 stressors adopted from previously published studies was used.[18-20] Each potential stressor had its frequency of occurrence classified as, never, rarely, sometimes, often and always, and these were scored as 1, 2, 3, 4 and 5, respectively.

Table 2: Academic Characteristics of Respondents

Variable	Frequency (n = 611)	Percent
Current Year of Study		
200 Level	117	19.1
300 Level	117	19.1
400 Level	221	36.2
500 Level	89	14.6
600 Level	67	11.0
Current Posting		
Preclinical	234	38.3
Block Posting	136	22.3
Introductory Posting	85	13.9
Senior Posting	67	11.0
Subspecialty Posting	47	7.7
Junior Posting	42	6.9
Self-Reported Academic Performance		
Satisfactory	461	75.5
Unsatisfactory	150	24.5

The Patient Health Questionnaire-4 (PHQ-4) was used to assess for the presence of complications of stress (depression and anxiety). It combines the Patient Health Questionnaire-2 (PHQ-2) and the Generalized Anxiety Disorder-2 (GAD-2) and is answered on a four-point Likert scale based on how frequently the respondent has experienced the symptom in the past two weeks. The PHQ-2 is a measure of depression, which includes the first two items from the longer depression measure, the PHQ-9. The GAD-2 is a measure of anxiety, with this measure including the first two items from the GAD-7.[21]

To assess the coping mechanisms, a standard tool, the brief Coping Orientation to Problems Experienced (the brief COPE), which is designed to measure effective and ineffective ways to cope with a stressful life event, was used.[22]

The data for the study was entered into IBM SPSS Version 25.0 Software, categorised and analysed using descriptive statistics, frequencies and percentages based on the total number of respondents. Univariate analysis was done to determine the frequency of occurrence of each stressor. The Brief-COPE questionnaire was inputted using a four-point Likert scale (1 = 1 haven't been doing this at all; 2 = I've been doing this a little bit; 3 = I've been doing this a medium amount; 4 = I've been doing this a lot). The 28 items were scored and regrouped into 14 items, each consisting of two items, with total scores on each scale being between two to eight. The scores for the two items in the group were added to give a total score for each item in the new scale. The mean of each and standard deviation was then calculated to determine the least and most used coping strategies. The PHQ-4 questionnaire was analysed singly, with the minimum score being 0 and the maximum score being 12. A score of 0-2 showed no psychological distress, while a score

of 3 and above showed psychological distress. A total score of ≥ 3 in the PHQ-2 and GAD-2 suggests depression and anxiety, respectively.[21]

The study was approved by the Ethical Committee of the University of Benin Teaching Hospital, with Protocol Number: ADM/E 22/A/VOL. VII/14831262. Informed verbal consent was obtained from the respondents and they were informed that they had the right to withdraw from the study at any time and that withdrawal posed no loss or harm. The data generated from the study was securely kept and were only available to the researchers.

Table 3: Frequency of Occurrence of Academic Stressors among Respondents

Variable	Frequency of Occurrence (n = 611)				
	Never Freq (%)	Rarely Freq (%)	Sometimes Freq (%)	Often Freq (%)	Very Often Freq (%)
Excessive Academic Workload	37 (6.1)	88 (14.4)	245 (40.1)	156 (25.5)	85 (13.9)
Poor learning environment	78 (12.8)	143 (23.4)	216 (35.4)	127 (20.8)	47 (7.7)
Inadequate learning materials	110 (18.0)	173 (28.3)	186 (30.4)	98 (16.0)	44 (7.2)
Inaudible lecturers	76 (12.4)	166 (27.2)	228 (37.3)	92 (15.1)	49 (8.0)
Lack of special guidance from faculty	97 (15.9)	168 (27.5)	178 (29.1)	106 (17.4)	62 (10.1)
Frequency of examinations	142 (23.2)	186 (30.4)	183 (30.0)	65 (10.6)	35 (5.7)
Frequent strikes by the university	36 (5.9)	67 (11.0)	128 (20.9)	146 (23.9)	234 (38.3)
Poor performance in examinations	164 (26.8)	218 (35.7)	147 (24.1)	57 (9.3)	25 (4.1)
Class attendance	198 (32.4)	156 (25.5)	163 (26.7)	58 (9.5)	36 (5.9)
Highly competitive peers	160 (26.2)	145 (23.7)	163 (26.7)	74 (12.1)	69 (11.3)
No personal interest in study course	264 (43.2)	166 (27.2)	107 (17.5)	42 (6.9)	32 (5.2)
Inconsiderate/Insensitive lecturers	132 (21.6)	184 (30.1)	164 (26.8)	66 (10.8)	65 (10.6)
Victimization by lecturers	297 (48.6)	167 (27.3)	89 (14.6)	35 (5.7)	23 (3.8)
Difficult patients/clients	239 (39.1)	183 (30.0)	124 (20.3)	44 (7.2)	21 (3.4)

RESULTS

A total of 611 undergraduate medical students participated in the study. Table 1 shows the sociodemographic characteristics of the respondents. The mean age of the respondents was 22.9 years ± 3.1 years. A little above half of the respondents were male 326 (53.4%). More than half of the respondents stayed in the school hostel 394 (64.5%) and half of the students, 307 (50.2%), had an allowance of above ₦30,000. (Table 1) Over one-third of the respondents were in 400 level 221 (36.2%) and the preclinical class 234 (38.3%). The majority of respondents reported satisfactory academic performance 461 (75.5%). (Table 2)

The most predominant academic stressors among respondents were frequent strikes 234 (38.3%) and excessive academic workload 85 (13.9%), while the least predominant academic stressors were poor performance in examinations 25 (4.1%) and victimization by lecturers 23 (3.8%). (Table 3)

Table 4: Frequency of Occurrence of Environmental, Psychosocial and Health-Related Stressors among Respondents

Variable	Frequency of Occurrence (n = 611)				
	Never Freq (%)	Rarely Freq (%)	Sometimes Freq (%)	Often Freq (%)	Very Often Freq (%)
ENVIRONMENTAL STRESSORS					
Noisy living environment	126 (20.6)	181 (29.6)	199 (32.6)	70 (11.5)	35 (5.7)
Congested hostels	186 (30.4)	172 (28.2)	139 (22.7)	66 (10.8)	48 (7.9)
Insecure hall of residence	212 (34.7)	190 (31.1)	130 (21.3)	49 (8.0)	30 (4.9)
Unreasonable landlords	376 (61.5)	104 (17.0)	85 (13.9)	32 (5.2)	14 (2.3)
Unkempt hostels	158 (25.9)	136 (22.3)	200 (32.7)	70 (11.5)	47 (7.7)
Lack of regular electricity	142 (23.2)	157 (25.7)	173 (28.3)	79 (12.9)	60 (9.8)
Lack of regular water supply	123 (20.1)	137 (22.4)	194 (31.8)	94 (15.4)	63 (10.3)
High cost of transportation	138 (22.6)	151 (24.7)	161 (26.4)	87 (14.2)	74 (12.1)
Walking long distances to lectures	138 (22.6)	140 (22.9)	163 (26.7)	82 (13.4)	88 (14.4)
PSYCHOSOCIAL STRESSORS					
Lack of holidays	134 (21.9)	199 (32.6)	192 (31.4)	58 (9.5)	28 (4.6)
Lack of time for recreation	97 (15.9)	147 (24.1)	245 (40.1)	74 (12.1)	48 (7.9)
Adjustment to roommates	203 (33.2)	170 (27.8)	164 (26.8)	49 (8.0)	25 (4.1)
Relationship with the opposite sex	179 (29.3)	184 (30.1)	176 (28.8)	46 (7.5)	26 (4.3)
Relationship with colleagues	149 (24.4)	209 (34.2)	185 (30.3)	46 (7.5)	22 (3.6)
Physical/Sexual Harassment	412 (67.4)	140 (22.9)	43 (7.0)	10 (1.6)	6 (1.0)
Loneliness	235 (38.5)	160 (26.2)	146 (23.9)	38 (6.2)	32 (5.2)
Worrying about the future	93 (15.2)	122 (20.0)	223 (36.5)	94 (15.4)	79 (12.9)
Family problems	153 (25.0)	177 (29.0)	185 (30.3)	69 (11.3)	27 (4.4)
High parental expectation	171 (28.0)	162 (26.5)	168 (27.5)	62 (10.1)	48 (7.9)
Financial problems	118 (19.3)	134 (21.9)	203 (33.2)	85 (13.9)	71 (11.6)
Domestic responsibility	159 (26.0)	179 (29.3)	185 (30.3)	58 (9.5)	30 (4.9)
Cult activities	488 (79.9)	86 (14.1)	27 (4.4)	6 (1.0)	4 (0.6)
HEALTH-RELATED STRESSORS					
Sleeping difficulties	265 (43.4)	143 (23.4)	141 (23.1)	42 (6.9)	20 (3.3)
Nutrition	173 (28.3)	144 (2.6)	205 (33.6)	57 (9.3)	32 (5.2)
Physical disability	503 (82.3)	71 (11.6)	26 (4.3)	6 (1.0)	5 (0.8)

Table 5: Frequency of Occurrence of PHQ-4 Components

Variable	Frequency of Occurrence (n = 611)			
	Not at all Freq (%)	Several days Freq (%)	Most days Freq (%)	Nearly every day Freq (%)
Feeling nervous, anxious or on edge	304 (49.8)	193 (31.6)	77 (12.6)	37 (6.1)
Not being able to stop or control worrying	315 (51.6)	182 (29.8)	76 (12.4)	38 (6.2)
Feeling down, depressed or hopeless	382 (62.5)	144 (23.6)	58 (9.5)	27 (4.4)
Little interest or pleasure in doing things	330 (54.0)	173 (28.3)	70 (11.5)	38 (6.2)

Table 4 shows that walking long distances to lectures (14.4%), high cost of transportation 74 (12.1%) and lack of regular water supply 63 (10.3%) were the most predominant environmental stressors. The least predominant environmental stressor was unreasonable landlords 14 (2.3%). The most predominantly occurring psycho-social stressors were worrying about the future 79 (12.9%), financial problems 71 (11.6%) and lack of time for recreation 48 (7.9%), while the least frequently occurring ones were cult activities 4 (0.6%) and physical/sexual harassment 6 (1.0%). The most frequently occurring health-related stressor was nutrition 32 (3.3%), while the least occurring was physical disability 5 (0.8%).

Table 5 shows the frequency of occurrence of the PHQ-4 components. About half of the respondents reported feeling nervous, anxious, or on edge in the preceding two weeks 307 (50.2%), while two hundred and ninety-six (48.4%) respondents reported not being able to stop or control worrying in the preceding two weeks. Three hundred and twenty-nine students (37.5%) were feeling down, depressed or hopeless and two hundred and eighty-one (46.0%) had little interest or pleasure in doing things.

Above half of the respondents had a PHQ-4 score of <3 349 (57.1%), with a mean score of 2.7 ± 3.1. One hundred and four (17.0%) and 136 (22.3%) respondents had a score of ≥ 3 in the PHQ-2 and GAD-2 questionnaires respectively. (Table 6)

Tables 7a, 7b and 8 depict the coping mechanisms employed by the respondents. It is seen that the coping mechanisms most often employed by undergraduate medical students were planning, active coping and religion. They had a mean score ± SD of; 5.01 ± 1.90, 4.99 ± 1.81 and 4.77 ± 2.07, respectively. The least used coping mechanisms were substance use, behavioural disengagement and denial with a mean score ± SD of; 2.45 ± 1.07, 2.89 ± 1.28 and 2.92 ± 1.43, respectively.

Table 6: PHQ-4, PHQ-2 and GAD-2 Scores among Respondents

Variable	Frequency (n = 611)	Percent
PHQ-4 Score		
<3	349	57.1
≥ 3	262	42.9
Mean ± SD: 2.7 ± 3.1		
PHQ-2 Score		
<3	507	83.0
≥ 3	104	17.0
Mean ± SD: 1.3 ± 1.6		
GAD-2 Score		
<3	475	77.7
≥ 3	136	22.3
Mean ± SD: 1.5 ± 1.7		

Table 7a: Frequency of Use of Coping Mechanisms by Undergraduate Medical Students in the University of Benin

Coping Mechanism	Frequency of Occurrence (n = 611)			
	Not at all Freq (%)	A little bit Freq (%)	A medium amount Freq (%)	A lot Freq (%)
1. Self-distracting				
Item 1: I've been turning to work to take my mind off things	188 (30.8)	234 (38.3)	111 (18.2)	78 (12.8)
Item 19: I've been doing something to think about it less, such as going to the movies, watching TV, reading, daydreaming, sleeping or shopping	190 (31.1)	191 (31.3)	129 (21.1)	101 (16.5)
2. Active coping				
Item 2: I've been concentrating my efforts on doing something about the situation I'm in	118 (19.3)	232 (38.0)	154 (25.2)	107 (17.5)
Item 7: I've been taking action to try to make the situation better	100 (16.4)	184 (30.1)	201 (32.9)	126 (20.6)
3. Denial				
Item 3: I've been saying to myself that this isn't real	422 (69.1)	121 (19.8)	45 (7.4)	23 (3.8)
Item 8: I've been refusing to believe that it has happened	429 (70.2)	108 (17.7)	46 (7.5)	28 (4.6)
4. Substance Use				
Item 4: I've been using alcohol or other drugs to make myself feel better	515 (84.3)	63 (10.3)	26 (4.3)	7 (1.1)
Item 11: I've been using alcohol or other drugs to help me get through it	511 (83.6)	67 (11.0)	25 (4.1)	8 (1.3)
5. Emotional support				
Item 5: I've been getting emotional support from others	167 (27.3)	219 (35.8)	142 (23.2)	83 (13.6)
Item 15: I've been getting comfort and understanding from someone	193 (31.6)	175 (28.6)	153 (25.0)	90 (14.7)
6. Instrumental support				
Item 10: I've been getting help and advice from other people	178 (29.1)	200 (32.7)	149 (24.4)	84 (13.7)
Item 23: I've been trying to get advice or help from other people about what to do	204 (33.4)	192 (31.4)	126 (20.6)	89 (14.6)
7. Behavioural disengagement				
Item 6: I've been giving up trying to deal with it	408 (66.8)	131 (21.4)	54 (8.8)	18 (2.9)
Item 16: I've been giving up the attempt to cope	431 (70.5)	120 (19.6)	51 (8.3)	9 (1.5)

DISCUSSION

This study assessed stressors, the presence of complications of stress and coping stressors used by undergraduate medical students in a tertiary institution in South-South Nigeria. The mean age of the respondents was 22.9 (SD ± 3.1) years. This could be attributed to the fact that most of the respondents were from the lower levels. This result is similar to a descriptive cross-sectional study carried out among undergraduate medical students in tertiary institutions in Nigeria, where the mean age was 22.6 (SD ± 3.4) years.[23] There was a higher proportion of male students compared to female students, and the majority of respondents were Christian and single.

There have been recurrent strike actions by lecturers in public universities in Nigeria, resulting in the extension of stay of medical students in the university. It is, therefore, not surprising that the major academic stressor among respondents was frequent strike actions. Strike actions show that workers are discontent. Therefore, in addition to being a source of academic stress for medical students, it is crucial

for medical lecturers to be satisfied with their job to work productively. Strikes are clear indicators of job dissatisfaction. Excessive academic work was also a predominant academic stressor in this study. This is similar to the findings of the study among undergraduate medical trainees at the University of Calabar, Nigeria, where excessive academic workload (82.3%) was identified as the major stressor.[19] A study on perceived stress and stressors among undergraduate medical students in another Nigerian institution found academic-related stress domains such as heavy workload to be high (43.8%) and severe (45.3%).[24] The clinical students' hostel is located in the university while their lectures are held in the teaching hospital. Therefore, these students have to walk far from the university to the teaching hospital and vice versa. Preclinical lectures are held in the university with lecture theatres being quite a distance from some of the university hostels. Students who live outside the campus have to use public transportation to reach either the university or the teaching hospital.

Table 7b: Frequency of Use of Coping Mechanisms by Undergraduate Medical Students in the University of Benin (Continued)

Coping Mechanism	Frequency of Occurrence (n = 611)			
	Not at all Freq (%)	A little bit Freq (%)	A medium amount Freq (%)	A lot Freq (%)
8. Venting				
Item 9: I've been saying things to let my unpleasant feeling escape	317 (51.9)	161 (26.4)	89 (14.6)	44 (7.2)
Item 21: I've been expressing my negative feelings	281 (46.0)	196 (32.1)	93 (15.2)	41 (6.7)
9. Positive Reframing				
Item 12: I've been trying to see it in a different light, to make it seem more positive	194 (31.8)	172 (28.2)	153 (25.0)	92 (15.1)
Item 17: I've been looking for something good in what is happening	161 (26.4)	189 (30.9)	175 (28.6)	86 (14.1)
10. Planning				
Item 14: I've been trying to come up with a strategy about what to do	114 (18.7)	155 (25.4)	207 (33.9)	135 (22.1)
Item 25: I've been thinking hard about what steps to take	147 (24.1)	182 (29.8)	164 (26.8)	118 (19.3)
11. Humour				
Item 18: I've been making jokes about it	269 (44.0)	176 (28.8)	109 (17.8)	57 (9.3)
Item 28: I've been making fun of the situation	328 (53.7)	158 (25.9)	83 (13.6)	42 (6.9)
12. Acceptance				
Item 20: I've been accepting the reality of the fact that it has happened	176 (28.8)	185 (30.3)	155 (25.4)	95 (15.5)
Item 24: I've been learning to live with it	157 (25.7)	193 (31.6)	165 (27.0)	96 (15.7)
13. Religion				
Item 22: I've been trying to find comfort in my religion or spiritual beliefs	190 (31.1)	149 (24.4)	134 (21.9)	138 (22.6)
Item 27: I've been praying or meditating	158 (25.9)	172 (28.2)	154 (25.2)	127 (20.8)
14. Self-blame				
Item 13: I've been criticizing myself	268 (43.9)	198 (32.4)	96 (15.7)	49 (8.0)
Item 26: I've been blaming myself for things that happened	319 (52.2)	166 (27.2)	77 (12.6)	49 (8.0)

These might explain why walking long distances to lectures and the high cost of transportation were predominant environmental stressors. Irregular pumping of water could explain the lack of regular water supply, which was also found to be a predominant environmental stressor among these students. In a similar study at the University of Calabar, lack of regular water supply was less important than lack of electricity.[19]

Worrying about the future, financial problems and lack of time for recreation constituted the predominant psychosocial stressors. Medical students are preoccupied with life after medical school, whether to remain in the country or leave the country, the area of specialty to consider and how to fund their goals.

Lack of time for recreation is also a common experience as medical schools run calendars separate from other undergraduate courses with short or no holidays between classes, postings, tests and examinations. The consequences of these are evident in the presence of stress-related complications (depression; 17.0% and anxiety; 22.3%) among the students, which is significant. This finding is similar to that of an Indian study conducted among medical undergraduate students studying at a tertiary care hospital situated in Mumbai City of Maharashtra, where 65.2% of the participants worried about their future.[25] This is, however, in contrast with a cross-sectional study conducted among medical undergraduate students in a private medical college in Tamil Nadu, India where the major significant psychosocial stressors were loneliness and family problems.[26]

Table 8: Coping Mechanisms Employed by Undergraduate Medical Students in the University of Benin

Coping Mechanism	Mean Score ± SD
Planning	5.01 ± 1.90
Active coping	4.99 ± 1.81
Religion	4.77 ± 2.07
Acceptance	4.60 ± 1.88
Positive reframing	4.54 ± 1.90
Use of emotional support	4.46 ± 1.86
Use of instrumental support	4.39 ± 1.89
Self-distracting	4.36 ± 1.70
Humour	3.66 ± 1.76
Self-blame	3.64 ± 1.71
Venting	3.60 ± 1.56
Denial	2.92 ± 1.43
Behavioural disengagement	2.89 ± 1.28
Substance use	2.45 ± 1.07

Medical students have been chronically exposed to higher levels of stress and stressors compared to students in other fields.[27] As a result, they have learned to develop various coping strategies and

prioritise those that help maintain their psychological health. This is reflected in this study as the coping strategies most often employed by the respondents were the adaptive coping styles (planning, active coping and religion), while the least used coping strategies among undergraduate medical students were the maladaptive ones (substance use, behavioural disengagement and denial). These findings are in agreement with those of an institutional-based cross-sectional study conducted to evaluate and compare medical students' stressors and coping strategies among undergraduate preclinical and clinical year students enrolled in a Southeast Ethiopian university where religious coping, active coping, positive reframing and planning were found to be the axioms used by most respondents.[28] Inversely, behavioural disengagement, denial and substance use were found to be the least used coping strategies.[28] This finding is also similar to the results of a Canadian study, which showed that the medical students used predominantly adaptive (e.g. active coping, emotional support, positive reframing) rather than maladaptive (e.g. denial, behavioural disengagement, social use) coping strategies in response to the stressors they face in medical school.[29]

CONCLUSION

The undergraduate medical students in this study, like their counterparts worldwide, are exposed to a myriad of academic, environmental, psychosocial and health-related stressors that adversely affect their psychological health and predispose them to psychological distress. Continuous use of adaptive coping strategies will mitigate these harmful effects. Guidance and counselling services and resources in the university should be adequately utilized by the students to aid timely identification and intervention of the deleterious effects of stress.

Limitation of the Study: The limitation of this study was that the findings of study were based on self-report. However, validated standardized instruments were used.

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