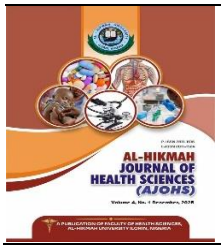
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Original Article

Academic-Related Stress, Its Determinants and Associated Health Outcomes Among Undergraduate Students in Selected Tertiary Institutions in Ilorin Metropolis

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ABSTRACT

Background: Academic-related stress is a growing concern among Nigerian undergraduates, but evidence from Ilorin Metropolis is limited.

Objective: To assess the prevalence, determinants, health outcomes, and predictors of academic-related stress among undergraduates in selected tertiary institutions in Ilorin Metropolis.

Methods: A descriptive cross-sectional study was conducted among 422 undergraduates selected by multistage sampling. Data were collected with a pretested self-administered questionnaire (Cronbach's $\alpha = 0.81$) and analysed with descriptive statistics, Chi-square tests, and binary logistic regression in SPSS version 27 ($p < 0.05$).

Results: All respondents reported some academic-related stress in the past three months: 40.3% rated it low or moderate, 46.4% high, and 13.3% very high. Fear of failure and deadline pressure (33.2% each) were the leading stressors. Frequent headaches (66.4%), sleep problems (66.1%), and academic anxiety (46.4%) were common. Stress was significantly associated with physical and mental health outcomes and with academic, sociodemographic, and psychosocial factors ($p < 0.001$).

Conclusion: High academic-related stress affects about six in ten undergraduates and is linked to poorer physical and mental health. Institutions should strengthen counselling, stress-management, and academic support services.

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Introduction

Stress is a physiological and psychological response that occurs when environmental demands exceed an individual's coping capacity, and among university students it is often driven by academic demands such as examinations, coursework, time pressure, and competition for academic success (World Health Organization, 2023; Wilks, 2008). The undergraduate years are widely recognised as a stressful phase of life, as students adapt to new academic systems, heavier workloads, independence from family supervision, and expectations of excellence, frequently with limited coping skills or social support; prolonged exposure to such demands has been associated with reduced

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concentration, poor academic outcomes, impaired decision-making, and adverse physiological and psychological effects, including anxiety, depression, burnout, sleep disturbance, and psychosomatic symptoms (Trigueros *et al*., 2020; Jafri *et al*., 2017; Backović *et al*., 2012).

In Nigeria, large class sizes, limited academic resources, frequent industrial actions, unstable academic calendars, and financial constraints intensify academic stress, with reported prevalence ranging from 30% to over 70% depending on institution, discipline, and measurement approach (Aihie & Ohanaka, 2019; Olatunji *et al*., 2021; Okwudishu *et al*., 2025). More recent Nigerian studies have also reported a high burden of stress-related mental health problems among undergraduates, including depression and suicidal ideation (Isara *et al*., 2022; Ladi-Akinyemi *et al*., 2023). Gender, year of study, socioeconomic background, and social support have been identified as important determinants, though findings on gender differences are inconsistent (Siddiqui, 2018), and academic stress has been linked to poor sleep, anxiety, depressive symptoms, substance use, and reduced academic engagement among students in Nigeria and elsewhere (Pacheco *et al*., 2017; Ladi-Akinyemi *et al*., 2023). Despite the growing burden of academic-related stress nationally and globally (Ibrahim *et al*., 2013; Ramón-Arbués *et al*., 2020; Beiter *et al*., 2015; Son *et al*., 2020; Pascoe *et al*., 2020; Essel & Owusu, 2017), there remains a paucity of context-specific empirical data for Ilorin Metropolis, a typical urban academic setting whose undergraduates face similar pressures compounded by accommodation, transportation, and mental-health-access challenges. This gap limits the development of targeted interventions and support services tailored to students' needs.

Because findings from other parts of Nigeria may not apply to Ilorin's institutional and socioeconomic context, local evidence is needed to inform counselling services, stress-reduction interventions, and university policy, and to provide a baseline for future research (World Health Organization, 2022).

The aim of the study was to assess academic-related stress, identify its determinants, and examine its associated health outcomes among undergraduate students in selected tertiary institutions in Ilorin Metropolis. The specific objectives were to: (i) determine the proportion of undergraduate students who self-report academic-related stress and the severity of that stress; (ii) identify the academic, sociodemographic, and psychosocial determinants of academic-related stress; (iii) assess the association between academic-related stress and physical health outcomes; (iv) assess the association between academic-related stress and mental health outcomes; and (v) examine the predictors of high academic-related stress among undergraduate students in the study area.

Conceptually, academic-related stress arises when academic demands examinations, assignments, competition, and fear of poor performance exceed students' adaptive capacity, and it is shaped by academic, psychosocial, sociodemographic, financial, and institutional determinants (Shah *et al*., 2010; Pascoe *et al*., 2020; Auerbach *et al*., 2018; Essel *et al*., 2020). Its consequences include physical outcomes (headaches, fatigue, insomnia, appetite change), mental health outcomes (anxiety, depression, poor concentration), and behavioural outcomes (substance use, social withdrawal) (Beiter *et al*., 2015; Wang *et al*., 2020), while students commonly cope through social support, time management, religious activity, and exercise (Freire *et al*., 2020). The study was guided by the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) and Selye's General Adaptation Syndrome theory (Selye, 1956), which respectively explain stress as a product of cognitive appraisal and coping resources, and as a physiological progression through alarm, resistance, and exhaustion stages. Empirical work across Australia, Spain, Finland, and Nigeria shows that academic workload, fear of failure, and financial difficulty are major predictors of stress with substantial health consequences (Pascoe *et al*., 2020; Ramón-Arbués *et al*., 2020; Othman *et al*., 2021; Olalekan *et al*., 2022; Essel & Owusu, 2017).

Methodology

Study design and setting. This study adopted a descriptive cross-sectional design to assess the prevalence, determinants, and health outcomes of academic-related stress among undergraduate students at a single point in time, without manipulation of variables. It was conducted in Ilorin Metropolis (comprising Ilorin West, Ilorin East, and Ilorin South Local Government Areas), Kwara State, Nigeria, among undergraduates enrolled in selected tertiary institutions in the area.

Sample size and sampling. A sample size of 422 was determined using Fisher's formula for populations greater than 10,000, based on a 95% confidence level, an estimated prevalence of 50% (Aihie & Ohanaka, 2019), and a 5% margin of error, with a 10% allowance for non-response. Respondents were selected using a four-stage sampling technique. In stage one, Ilorin Metropolis was stratified into its three Local Government Areas. In stage two, one tertiary institution was randomly selected from each Local Government Area by balloting: Al-Hikmah university (Ilorin West), Kwara State University (Ilorin East), and University of Ilorin (Ilorin South). In stage three,

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number faculties were randomly selected in each institution and departments were randomly selected from each selected faculty. The 422 respondents were shared among the three institutions and respondents respectively, and each institution's share was further divided proportionately among its selected faculties and departments. In stage four, students were selected from departmental class lists by systematic random sampling.

Instrument. Data were collected using a structured, self-administered questionnaire covering socio-demographic characteristics, academic-related stress, its determinants, and associated health outcomes. The questionnaire was subjected to face and content validity review by public health experts and pretested outside the study area, yielding a Cronbach's alpha reliability coefficient of 0.81. Overall stress level was self-rated by respondents; for regression analysis, ratings of "high" and "very high" were coded as high academic-related stress (1) and all other ratings as (0). Eligible participants were undergraduates who gave informed consent, while postgraduate students, those absent during data collection, and unwilling students were excluded. Questionnaires were administered during lecture periods by the researcher and trained research assistants, with institutional permission, and checked for completeness before analysis.

Data analysis. Data were coded and analysed using SPSS version 27. Descriptive statistics (frequencies, percentages, mean, and standard deviation) summarised the variables. Chi-square tests of independence were used to test the association of each determinant and each health outcome with academic-related stress (objectives ii–iv), and the degrees of freedom (df) and p-value are reported separately for every variable. To identify the predictors of high academic-related stress (objective v), variables significant at $p < 0.05$ in the Chi-square analysis were entered into a multivariable binary logistic regression model, and results are presented as adjusted odds ratios (aOR) with 95% confidence intervals (CI). Model fit was assessed with the Hosmer–Lemeshow test. Statistical significance was set at $p < 0.05$.

Ethical considerations. An introductory letter was obtained from the department. Permission was obtained from the management of each selected institution, and written informed consent, voluntary participation, confidentiality, and anonymity were maintained throughout the study.

Results

Socio-Demographic Characteristics

Most respondents (60%) were aged 21–25 years, 34% were aged 16–20 years, and 7% were aged 26–30 years. The majority were single (97%), and 53.6% were female against 46.4% male. Most respondents were in 400 level (39.8%) and 300 level (33.6%), with 100 level and 500 level each accounting for 13.3%.

Prevalence and Severity of Academic-Related Stress

Table 1: Prevalence and Severity of Academic-Related Stress (n = 422)

Variable	Category	Freq.	%
Experienced academic stress (past 3 months)	Yes	422	100.0
Frequency of stress	Often	252	59.7
Major stressor	Fear of poor grades/failure	140	33.2
Major stressor	Time pressure to meet deadlines	140	33.2
Major stressor	Examination pressure	114	27.0
Overall stress level	Low or moderate stress	170	40.3
Overall stress level	High stress	196	46.4
Overall stress level	Very high stress	56	13.3
Duration of stress	More than 6 months	225	53.3

Every respondent (100%) reported experiencing some level of academic-related stress in the past three months, but its severity varied: 170 (40.3%) rated their stress as low or moderate, 196 (46.4%) as high, and 56 (13.3%) as very high, giving a combined prevalence of high academic-related stress of 59.7%. The most commonly reported stressors were fear of poor grades/failure and time pressure to meet deadlines (33.2% each) and examination pressure (27.0%), and over half (53.3%) had been stressed for more than six months.

Academic, Sociodemographic and Psychosocial Determinants

Table 2: Determinants of Academic-Related Stress

Variable	Category	Freq.	%
Financial difficulties affecting studies	Occasionally	227	53.8
Fear of disappointing lecturers/parents	Often	252	59.7

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Anxiety about future after graduation	Often	225	53.3
Loneliness/isolation on campus	Sometimes	255	60.4
Inadequate sleep due to academic work	Sometimes	226	53.6
Large class sizes/overcrowded halls	Frequently	169	40.0
Main source of financial support	Parents/guardians	394	93.4

Financial difficulties (53.8%), fear of disappointing lecturers or parents (59.7%), anxiety about life after graduation (53.3%), campus loneliness (60.4%), and inadequate sleep (53.6%) were the most commonly reported determinants; inadequate learning materials affected 53.3% of respondents, and family support was the most common support system (73.2%), while most students (93.4%) depended on parents for financial support.

Physical Health Outcomes

Table 3: Physical Health Outcomes Associated with Academic-Related Stress

Variable	Category	Freq.	%
Physical symptom	Frequent headaches	280	66.4
Physical symptom	Fatigue/extreme tiredness	113	26.8
Sleep problems	Sometimes	279	66.1
Appetite change	Decreased significantly	197	46.7
Weight change (unintentional)	Yes	311	73.7
Sought medical attention	No	281	66.6

Frequent headaches (66.4%), sleep problems (66.1%), decreased appetite (46.7%), and unintentional weight change (73.7%) were the most common physical complaints, yet only 33.4% of students sought medical attention.

Mental Health Outcomes

Table 4: Mental Health Outcomes Associated with Academic-Related Stress

Variable	Category	Freq.	%
Emotional symptom	Persistent sadness/low mood	140	33.2
Anxiety about academic matters	Often	196	46.4
Effect on concentration/decisions	Sometimes	224	53.1
Considered dropping out	Occasionally	169	40.0
Considered dropping out	Seriously	28	6.6
Coping strategy	Prayer/religious activity	170	40.3
Coping strategy	Did nothing	139	32.9

Nearly half of respondents (46.4%) often felt anxious about academic matters, 53.1% reported stress-related concentration/decision-making difficulty, and 46.6% had at some point considered dropping out (40.0% occasionally, 6.6% seriously). Prayer or religious activity (40.3%) was the leading coping strategy, but a notable 32.9% did nothing to cope.

Perceived Sources of High Academic-Related Stress

Table 5: Perceived Sources of High Academic-Related Stress

Variable	Category	Freq.	%
Daily hours on academic work	5–7 hours	142	33.6
Workload feels unmanageable	Sometimes	253	60.0
Perceived main cause of stress	Fear of examination failure	282	66.8
Perceived cause of high stress	Fear of failure/poor grades	169	40.0
Satisfaction with counselling services	Neutral	254	60.2

Fear of examination failure was the most frequently perceived cause of stress (66.8%), and 60.0% of students felt their workload was sometimes unmanageable; most respondents (60.2%) were neutral about the availability of counselling services, with a combined 26.6% expressing dissatisfaction.

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Tests of Hypotheses

Table 6: Association Between Academic-Related Stress and Physical Health Outcomes

Variable	df	*p*-value	Decision
Sleep problems	4	< .001	Reject H_0
Appetite change	4	< .001	Reject H_0
Physical symptoms	6	< .001	Reject H_0
Other physical conditions	6	< .001	Reject H_0
Medical attention sought	2	< .001	Reject H_0

Each physical health outcome was significantly associated with academic-related stress ($p < .001$; Table 6); therefore, the null hypothesis was rejected.

Table 7: Association Between Academic-Related Stress and Mental Health Outcomes

Variable	df	*p*-value	Decision
Anxiety/nervousness	10	< .001	Reject H_0
Concentration problems	4	< .001	Reject H_0
Thoughts of dropping out	6	< .001	Reject H_0
Psychological symptoms	4	< .001	Reject H_0
Coping strategies	4	< .001	Reject H_0

Each mental health outcome was significantly associated with academic-related stress ($p < .001$; Table 7); therefore, the null hypothesis was rejected.

Table 8: Influence of Academic, Sociodemographic and Psychosocial Factors on Academic-Related Stress

Variable	df	*p*-value	Decision
Age	4	< .001	Reject H_0
Sex	2	< .001	Reject H_0
Year of study	6	< .001	Reject H_0
Academic performance	6	< .001	Reject H_0
Financial difficulties	4	< .001	Reject H_0
Loneliness	6	< .001	Reject H_0
Anxiety about the future	4	< .001	Reject H_0
Support system	6	< .001	Reject H_0

Each academic, sociodemographic, and psychosocial factor tested was significantly associated with academic-related stress ($p < .001$; Table 8); therefore, the null hypothesis was rejected.

Discussion

This study found that academic-related stress was universal among undergraduates in Ilorin Metropolis, and 59.7% reported high or very high stress. This is higher than the 53.5% with high stress reported among medical students at Babcock University (Okwudishu *et al*., 2025) and at the upper end of the 30–74% range reported in earlier Nigerian studies (Aihie & Ohanaka, 2019; Olalekan *et al*., 2022). Part of this difference may reflect measurement, since a self-rated question captures any perceived stress, whereas standardised scales apply cut-off points. It may also reflect conditions common on Nigerian campuses, such as disrupted academic calendars, large classes, and financial pressure. Fear of failure, deadline pressure, and examination pressure were the dominant stressors, as reported in Pakistan and Finland (Shah *et al*., 2010; Essel & Owusu, 2017).

Psychosocial and economic factors featured strongly. More than half of respondents reported financial difficulties, anxiety about life after graduation, and fear of disappointing parents or lecturers, and almost all depended on parents for financial support. Similar studies have identified financial hardship, family expectations, and weak institutional support as key drivers of student stress (Ramón-Arbués *et al*., 2020; Essel *et al*., 2020). Within the Transactional Model of Stress and Coping (Lazarus & Folkman, 1984), these factors increase the perceived threat of academic demands while reducing the resources students believe they have to cope, which may explain why stress was both common and prolonged, with over half of the students stressed for more than six months.

Stress was significantly associated with physical complaints such as headaches, sleep problems, loss of appetite, and unintended weight change, in agreement with Othman *et al*. (2021). This is biologically plausible: Selye's General Adaptation Syndrome describes how prolonged stress moves the body from alarm to resistance and eventually exhaustion, through sustained activation of the stress-hormone system that disturbs sleep, appetite, and immunity (Selye, 1956). Despite this burden, two-thirds of students did not seek

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medical care, which suggests poor health-seeking behaviour that may allow symptoms to persist.

Mental health outcomes were equally important. Nearly half of the students often felt anxious about academic matters, more than half had concentration problems, and 46.6% had considered dropping out. These findings agree with international and Nigerian evidence linking academic stress with anxiety, depression, and poor study progress (Beiter *et al*., 2015; Grøtan *et al*., 2019; Ladi-Akinyemi *et al*., 2023). Prayer was the main coping strategy, reflecting the religious character of the study setting, but about a third of students did nothing to cope, as also reported by Essel and Owusu (2017). Students who do not cope actively may be more likely to move from stress to anxiety and depression (Pascoe *et al*., 2020).

These findings have practical implications. For institutions, they point to the need for accessible counselling, early screening of students at risk, and academic policies that reduce deadline crowding and calendar disruption. For lecturers and parents, they highlight the role of expectations and supportive communication. For researchers, they provide baseline data for Ilorin Metropolis against which interventions can be evaluated.

This study has limitations. Its cross-sectional design does not allow causal conclusions, so the direction of the link between stress and health outcomes cannot be confirmed. Stress level was self-rated and health outcomes were self-reported rather than clinically diagnosed, which may introduce reporting bias. The study covered only selected institutions in Ilorin Metropolis, so the findings may not apply to all Nigerian students. Future studies should use standardised scales and longitudinal designs.

Conclusion

Academic-related stress was reported by all respondents, and about six in ten experienced high or very high stress, driven chiefly by fear of poor grades or failure, examination pressure, and time pressure to meet deadlines, and compounded by financial difficulty, family-related pressure, loneliness, and inadequate sleep. Stress was significantly associated with both physical health outcomes (headaches, sleep disturbance, appetite and weight change) and mental health outcomes (anxiety, low mood, concentration difficulty, and thoughts of dropping out), and was significantly influenced by sociodemographic, academic, and psychosocial factors. Coping was dominated by religious/spiritual practice and social support, though a substantial minority coped through inaction, and satisfaction with institutional counselling services was low. If unaddressed, academic-related stress may continue to undermine students' academic performance, health, and overall quality of life.

Recommendations

Tertiary institutions should strengthen functional counselling and mental health services, mentorship, and stress-management programmes, and improve academic environments through stable academic calendars, manageable workloads, and adequate learning facilities. Lecturers should adopt supportive teaching practices and refer distressed students promptly, while parents and guardians should offer emotional and financial support rather than excessive pressure. Students should build time-management skills and healthy coping strategies, and government should increase funding for learning facilities and student mental health services. Future research should examine the long-term effects of academic stress using longitudinal and mixed-methods designs.

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Author Contribution

Akande Sofiat Olabimpe conceptualised and designed the study, developed the research instrument, collected and analysed the data, interpreted the findings, and drafted and approved the final manuscript.

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