



Demographic Predictors and Preventive Strategies of Depression Severity among Undergraduates of Tertiary Institutions in the Federal Capital Territory, Abuja, Nigeria

George Usman Kato¹, Tochi Emmanuel Iwuagwu²

¹Department of Educational Psychology, Bingham University, Karu, Nasarawa State, Nigeria

²Department of Human Kinetics and Health Education, University of Nigeria, Nsukka, Nigeria

***Corresponding author:** George Usman Kato

E-mail: george.kato@binghamuni.edu.ng

Abstract

Depressive symptoms are an important mental health concern among undergraduates. This study examined selected demographic predictors of depression severity and assessed expert-rated preventive strategies among undergraduates of tertiary institutions in the Federal Capital Territory (FCT), Abuja, Nigeria. A correlational research design was used. From a population of 12,578 undergraduate students, 408 were selected through multistage sampling and 390 completed questionnaires were suitable for analysis, giving a 95.6% usable response rate. Data were collected using a researcher-adapted demographic questionnaire, the nine-item Patient Health Questionnaire (PHQ-9), and a six-item Preventive Strategies of Depression Severity Questionnaire. Descriptive statistics, point-biserial correlation, multiple linear regression, means, and standard deviations were used. Depression severity was weakly positively related to age ($r_{pb} = .245$) and year of study ($r_{pb} = .124$), and weakly negatively related to gender ($r_{pb} = -.140$) and living arrangement ($r_{pb} = -.117$). The regression model was significant, $F(5, 384) = 2.48$, $p = .031$, but explained only 3.1% of the variance. Year of study was the only significant individual predictor ($\beta = .120$, $p = .023$). All six preventive strategies were rated appropriate by experts ($M = 3.40$, $SD = 0.64$), with mental health screening receiving the highest rating. Tertiary institutions should implement confidential screening, early identification, stigma-reduction education, psychological support, and referral pathways for undergraduate students, particularly those experiencing elevated symptoms or academic and transition-related stress.

Keywords: Depression severity, Undergraduate students, Demographic predictors, Preventive strategies, Tertiary institutions, Nigeria

Introduction

Depression is a major global public health concern, affecting people across age groups and socioeconomic settings, while university students represent a particularly important population because the transition to tertiary education coincides with academic, social, financial, and developmental pressures. The World Health Organization (WHO, 2025) estimates that hundreds of millions of people worldwide live with depression, making it one of the leading causes of disability globally. Recent WHO estimates indicate that more than 300 million people worldwide live with depression, underscoring the continuing scale of the problem. Among university students, the burden is also substantial. A 2025 umbrella review involving more than eight million university students reported considerable burdens of mental disorder symptoms,



including depression, anxiety, and related psychological difficulties (Paiva et al., 2025). These findings demonstrate that depression among students is not merely an individual clinical concern but a significant global educational and public health issue.

The severity of depressive symptoms among university students varies from minimal or mild symptoms to moderate, moderately severe, and severe depression, with the latter levels potentially impairing academic performance, interpersonal functioning, and quality of life. Evidence from systematic reviews indicates that university students experience a substantial burden of depressive symptoms, with estimates varying across countries and populations (Heumann et al., 2024; Paiva et al., 2025). The post-COVID-19 period has further heightened concern about student mental health, with recent meta-analytic evidence indicating a substantial burden of depression among university students globally (Zhang et al., 2026). Importantly, depression severity is influenced by multiple interacting factors rather than by a single demographic characteristic. Age, sex or gender, marital status, living arrangement, year of study, academic workload, financial difficulties, social support, and other psychosocial circumstances may contribute to differences in students' depressive symptoms.

The global burden has consequently strengthened the emphasis on prevention, early identification, and timely intervention. Universities provide a strategic setting for these measures because they bring together large populations of young people who can be reached through health education, counselling, psychological services, screening programmes, peer support, stigma-reduction initiatives, and referral systems. Recent evidence indicates that psychosocial interventions, including cognitive-based and mindfulness-based approaches, can reduce depression and psychological distress among university students, although the strength of evidence varies across interventions (Muriago et al., 2026). Digital mental health interventions may further improve accessibility for students who experience barriers to conventional face-to-face services (Madrid-Cagigal et al., 2025), while self-compassion interventions have also demonstrated promising effects on depressive symptoms (Sobhaninia et al., 2026). These approaches reinforce the importance of prevention alongside early identification and treatment.

The problem is particularly important in Africa, where university students may experience additional barriers related to limited mental health resources, stigma, inadequate specialist services, and restricted access to affordable care. A 2025 mixed-methods systematic review of university students in Africa found continuing challenges in the availability, accessibility, and utilization of mental health services and support, highlighting the need for institution-based and contextually appropriate approaches (Wao et al., 2025). In Nigeria, recent studies similarly indicate that depressive symptoms constitute an important concern among tertiary students. Adebayo et al. (2024), for example, identified academic workload and other contextual difficulties among factors associated with depression among clinical medical students, while Kwarteng et al. (2026) reported depressive symptoms among Nigerian optometry students and observed differences according to selected demographic and contextual characteristics. Iweama et al. (2024) also reported important relationships between depression and suicidal behaviour among Nigerian undergraduates. These findings strengthen the case for early identification and accessible mental health support within tertiary institutions.

The assessment of depression severity among undergraduate students is important because depressive experiences may range from minimal to severe symptoms, with varying implications for academic functioning, social relationships and overall wellbeing. The Patient Health



Questionnaire-9 (PHQ-9) provides a structured measure of depressive symptom severity and categorizes symptoms from minimal to severe (Kroenke et al., 2001). Its validity as a screening measure among Nigerian university students has also been established (Adewuya et al., 2006). However, depression severity does not occur in isolation; students differ in their social and academic circumstances, which may influence their vulnerability to depressive symptoms. Demographic characteristics such as age, gender, marital status, living arrangement and year of study may therefore provide useful indicators for examining variations in depression severity. Understanding these characteristics can help identify student groups that may require closer attention and inform targeted prevention and early-support strategies within tertiary institutions.

Demographic characteristics may be associated with depression severity through different social and developmental pathways. Age may reflect developmental and role changes; sex or gender may be associated with differential exposure to stressors; marital status may influence social support; living arrangement may shape access to family support, accommodation quality, and commuting demands; and year of study may correspond with academic workload, examinations, adjustment, and career uncertainty. However, demographic variables alone are unlikely to explain most variation in student depression. Contemporary evidence points to psychological, socioeconomic, academic, interpersonal, and institutional determinants (Paiva et al., 2025; Sheldon et al., 2021).

Depression is an important mental health concern among university students because it can impair academic functioning, social relationships and overall wellbeing. Evidence from Nigeria indicates a substantial burden of depressive symptoms among tertiary-level students, with academic workload and other student-related pressures identified as important contributors. Recent evidence among clinical medical students in North Central Nigeria, for example, reported a high prevalence of depression and highlighted heavy academic workload as a major contributing factor (Obilade et al., 2024). Despite increasing attention to student mental health, there remains limited evidence on the extent to which basic demographic characteristics predict depression severity among undergraduates in the Federal Capital Territory, Abuja. More importantly, evidence on practical preventive strategies that can be implemented within tertiary institutions remains insufficient. This evidence gap makes it difficult for university administrators, counsellors and mental health professionals to identify students who may require early support and to design contextually appropriate preventive responses. Against this background, there remains a need for locally relevant evidence on demographic characteristics associated with depression severity and on practical preventive strategies that tertiary institutions can implement. Therefore, this study examined demographic predictors and preventive strategies of depression severity among undergraduate students of tertiary institutions in the Federal Capital Territory, Abuja. Accordingly, the study objectives were to determine the relationship between selected demographic characteristics and depression severity among undergraduate students, identify the demographic variables that significantly predict depression severity, and assess expert-rated preventive strategies for reducing depression severity among undergraduate students in tertiary institutions in the Federal Capital Territory, Abuja, Nigeria. The study findings can guide tertiary-institution administrators, counselling units, psychologists, health educators, and other mental health professionals in prioritising feasible, evidence-informed measures for early identification, prevention, support, and referral of undergraduate students experiencing depressive symptoms.

Methods



Study design and setting

A correlational research design was used because the study examined statistical relationships between demographic characteristics and depression severity without manipulating the study variables. The study was conducted among undergraduate students of selected tertiary institutions in the Federal Capital Territory, Abuja, Nigeria. The selected institutions were the University of Abuja, Baze University, and the College of Education, Zuba.

Study population

The study population comprised 12,578 undergraduate students enrolled in the selected tertiary institutions during the 2019/2020 academic session. The reported enrolments were 6,416 students at the University of Abuja, 3,985 at Baze University, and 2,177 at the College of Education, Zuba.

Sample size and sampling technique

A target sample of 408 students was used. The study employed a multistage sampling procedure involving selection of tertiary institutions, faculties or schools, departments or units, and individual students. Seventeen students were selected from each sampled department or unit. Of the 408 questionnaires administered, 390 were returned and sufficiently complete for analysis, giving a 95.6% usable response rate.

Data collection instruments

Data were collected using a researcher-adapted Demographic Predictors of Depression Severity Questionnaire (DPDSQ), the Patient Health Questionnaire-9 (PHQ-9), and a six-item Preventive Strategies of Depression Severity Questionnaire (PSDSQ).

The DPDSQ contained demographic items covering age, sex/gender, marital status, living arrangement, and year of study. The PHQ-9 comprised nine items scored from 0 - 3. Total scores ranged from 0 - 27, with higher scores indicating greater depression severity. Adewuya et al. (2006) reported satisfactory psychometric properties among Nigerian university students, including internal consistency of .85, concurrent validity of .67, and one-month test-retest reliability of .894.

The PSDSQ comprised six proposed preventive strategies. Ten Public Health and Mental Health Education experts assessed the appropriateness of the strategies using a four-point response format. A mean score of 2.50 or greater was interpreted as appropriate.

Data collection procedure

An introductory letter from the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka, was presented to relevant authorities. Questionnaires were administered in lecture halls at agreed times. Participation was voluntary, and respondents were informed about the study purpose, confidentiality, privacy, and their right to decline participation. Completed questionnaires were collected after administration.

Because the PHQ-9 includes an item assessing thoughts of death or self-harm, appropriate implementation requires a clear referral pathway for respondents who indicate significant risk.



Data analysis

Mean and standard deviation were used for descriptive summaries and expert ratings. Point-biserial correlation was used to examine relationships between depression severity and appropriately coded dichotomous demographic variables. Multiple linear regression assessed the joint and individual predictive contributions of age, sex/gender, marital status, living arrangement, and year of study. Statistical significance was evaluated at $p \leq .05$. Correlations below .30 in absolute value were interpreted as weak, .30–.59 as moderate, and .60 or greater as strong. Regression interpretation used B, β , t, p, and 95% confidence intervals. For preventive strategies, $M \geq 2.50$ indicated appropriateness.

Results

Table 1: Point-Biserial Correlations Among Depression Severity and Selected Demographic Characteristics

Variable	1	2	3	4	5	6
1. Depression severity	1.00					
2. Age	.245	1.00				
3. Gender	-.140	.044	1.00			
4. Marital status	.040	.278	.081	1.00		
5. Living arrangement	-.117	-.009	.058	.151	1.00	
6. Year of study	.124	.073	.033	-.213	-.220	1.00

Table 1 shows that depression severity had a weak positive relationship with age ($r_{pb} = .245$) and year of study ($r_{pb} = .124$), weak negative relationships with gender ($r_{pb} = -.140$) and living arrangement ($r_{pb} = -.117$), and a negligible positive relationship with marital status ($r_{pb} = .040$).



Table 2: Expert Ratings of Proposed Preventive Strategies for Depression Severity

Preventive strategy	Mean	SD	Decision
Organize school-based interventions led by mental health educators and psychologists to identify students at high risk and provide appropriate support	3.30	0.95	Appropriate
Implement cognitive behavioural therapy through appropriately qualified mental health professionals	3.50	0.85	Appropriate
Implement mental health interventions that reduce social stigma and facilitate prompt help-seeking among students with depressive symptoms	3.10	0.57	Appropriate
Establish pathways for mental health care and education targeting stress-related factors that may trigger depressive symptoms	3.30	0.48	Appropriate
Build supportive and psychologically healthy institutional environments to reduce contextual contributors to depressive symptoms	3.50	0.53	Appropriate
Implement mental health screening programmes to identify students at risk and facilitate referral for appropriate assessment and treatment	3.70	0.48	Appropriate
Grand mean	3.40	0.64	Appropriate

Note. N = 10. Decision rule: $M \geq 2.50$ = appropriate; $M < 2.50$ = inappropriate.

Table 2 shows that all six strategies exceeded the criterion mean. The grand mean of 3.40 (SD = 0.64) indicates general expert agreement that the proposed strategies were appropriate. Mental health screening received the highest rating ($M = 3.70$, $SD = 0.48$).

Table 3
Multiple Regression Analysis of Demographic Predictors of Depression Severity

Predictor	B	B	t	P	95% CI for B
Constant	5.294	—	2.438	.015	[1.024, 9.564]
Gender	-0.205	-.018	-0.357	.721	[-1.333, 0.923]
Age	0.034	.033	0.643	.521	[-0.028, 0.055]
Marital status	2.143	.073	1.351	.177	[-0.976, 5.261]
Living arrangement	-1.136	-.100	-1.930	.054	[-2.293, 0.021]
Year of study	0.576	.120	2.286	.023	[0.080, 1.071]

Model: $R = .176$, $R^2 = .031$, adjusted $R^2 = .019$, $F(5, 384) = 2.48$, $p = .031$.

Table 3 shows that the regression model was statistically significant and explained 3.1% of the variance in depression severity. Year of study was the only statistically significant individual predictor ($\beta = .120$, $p = .023$). Living arrangement approached but did not reach statistical significance ($\beta = -.100$, $p = .054$). Gender, age, and marital status were not statistically significant individual predictors. Thus, the null hypothesis was rejected for the overall regression model but not for each individual demographic predictor.



Discussion

The study found generally weak relationships between depression severity and the demographic variables examined. Age and year of study were positively related to depression severity, whereas gender and living arrangement were negatively related and marital status showed a negligible positive relationship. The finding that year of study was the only significant individual predictor in the regression model suggests that students' academic stage may be relevant to their experience of depressive symptoms.

The positive relationship between year of study and depression severity may reflect the cumulative academic and psychosocial pressures associated with progression through tertiary education. Students in later years may face increased academic workload, examinations, research requirements, career uncertainty, financial pressures, and concerns about transition into employment. This interpretation is consistent with evidence that university students experience multiple interacting academic, social, financial, and psychological stressors (Paiva et al., 2025; Sheldon et al., 2021).

Although age was positively correlated with depression severity, it was not a significant independent predictor in the regression model. This difference between bivariate association and multivariable prediction indicates that the observed relationship with age may overlap with other demographic characteristics, particularly year of study. Consequently, age alone should not be regarded as a sufficient basis for identifying students at risk.

Gender was negatively correlated with depression severity but was not a significant predictor after adjustment for the other demographic variables. This finding illustrates the importance of avoiding conclusions based solely on unadjusted associations. Although some Nigerian and international studies have reported higher depression levels among female students, gender differences may vary according to population characteristics, measurement approaches, social context, and other determinants (Kwarteng et al., 2026; Sheldon et al., 2021).

Living arrangement approached statistical significance in the regression model ($p = .054$) but did not meet the conventional .05 criterion. This near-significant finding may indicate that accommodation and social-support circumstances deserve further investigation. Students living away from family support may experience different levels of social connection, financial pressure, commuting demands, or accommodation-related stress. However, the present evidence does not justify describing living arrangement as a statistically significant predictor.

The relatively low R^2 of .031 is particularly important. Although the demographic variables collectively produced a statistically significant model, they explained only 3.1% of the variance in depression severity. This indicates that demographic characteristics are only a small part of the broader determinants of student depression. Psychological, socioeconomic, academic, behavioural, interpersonal, and institutional factors are likely to account for additional variation (Paiva et al., 2025; Sheldon et al., 2021). Prevention should therefore not be restricted to demographic risk profiling.

The expert ratings support an institution-based prevention framework. Mental health screening received the highest rating ($M = 3.70$), suggesting strong expert support for systematic identification of students experiencing elevated depressive symptoms. The PHQ-9 is particularly suitable for this purpose because it is brief and has documented validity and reliability among



Nigerian university students (Adewuya et al., 2006). Screening should, however, be linked to confidential assessment, appropriate communication of results, and referral rather than being treated as diagnosis.

The high rating for cognitive behavioural therapy is consistent with contemporary evidence. Recent evidence indicates that cognitive-based and other psychosocial interventions can reduce depression and psychological distress among university students, although certainty varies across intervention types (Cuijpers et al., 2024; Muriago et al., 2026). Consequently, institutions should ensure that students identified with persistent or clinically significant symptoms can access appropriately qualified mental health professionals.

The rating of stigma-reduction interventions also has practical significance. Stigma can discourage students from disclosing psychological difficulties and seeking professional help. Mental health literacy programmes led by health educators, counsellors, psychologists, and trained peer leaders can improve recognition of depressive symptoms and encourage timely help-seeking.

Digital mental health interventions may further extend access to students who experience barriers to conventional face-to-face services (Madrid-Cagigal et al., 2025). Such approaches are particularly useful as complementary services rather than replacements for clinical assessment. Similarly, emerging evidence on self-compassion interventions suggests potential benefits for depressive symptoms among university students (Sobhaninia et al., 2026).

The findings also have wider public health implications. African evidence indicates persistent challenges in the availability, accessibility, and utilization of mental health services among university students (Wao et al., 2025). Nigerian tertiary institutions therefore need practical systems that combine health promotion, screening, counselling, psychological intervention, stigma reduction, and referral. Because the PHQ-9 includes an item concerning suicidal thoughts, institutional screening programmes should also have clear procedures for responding to students who report significant psychological distress or self-harm concerns (Iweama et al., 2024).

The study has several strengths. First, it included students from different types of tertiary institutions, including public and private university settings and a college of education. Second, the multistage sampling procedure provided a structured approach to participant selection. Third, the PHQ-9 has specific psychometric support among Nigerian university students. Fourth, the study combined predictor analysis with expert assessment of practical preventive strategies. Finally, the study achieved a high usable response rate of 95.6%.

The correlational cross-sectional design prevents causal inference. Depressive symptoms were self-reported and may have been affected by recall or social-desirability bias. The PHQ-9 is a screening and severity-assessment instrument and does not by itself establish a clinical diagnosis. The regression model explained only 3.1% of the variance, indicating that important psychological, academic, socioeconomic, behavioural, interpersonal, and institutional predictors were not included. In addition, the preventive strategies were assessed by experts rather than evaluated through an intervention trial; therefore, their ratings demonstrate perceived appropriateness rather than demonstrated effectiveness.

Conclusion



Depression severity among undergraduate students in the FCT, Abuja, demonstrated generally weak relationships with the demographic characteristics examined. Age and year of study showed weak positive relationships with depression severity, while gender and living arrangement showed weak negative relationships and marital status showed a negligible positive relationship. Collectively, the demographic variables significantly predicted depression severity, but they explained only 3.1% of its variance. Year of study was the only statistically significant individual predictor, whereas living arrangement approached but did not reach statistical significance. All six proposed preventive strategies were considered appropriate by the participating experts, with mental health screening receiving the highest rating. The findings support an integrated institutional approach combining screening, early identification, stigma reduction, psychological support, mental health education, and referral. Particular attention is warranted for students experiencing academic and transition-related pressures, while universal mental health promotion remains important for the wider undergraduate population.

Recommendations

1. Tertiary-institution administrators, counselling units, psychologists, and health educators should implement confidential mental health screening and early-identification programmes for all undergraduate students, with particular attention to students experiencing major academic transitions, so as to identify elevated depressive symptoms early and connect affected students with appropriate assessment and care.
2. Psychologists, counsellors, and appropriately qualified mental health professionals should provide evidence-based psychological interventions for undergraduate students with persistent or clinically significant depressive symptoms, in order to reduce symptom severity, strengthen coping, and protect academic and social functioning.
3. Health educators, counsellors, student-affairs units, and trained student peer leaders should provide mental health-literacy and stigma-reduction programmes for the undergraduate student population, aimed to improve recognition of depressive symptoms, encourage appropriate help-seeking, and reduce barriers to care.
4. Academic departments and student-support units should provide targeted academic and psychosocial support for students in later years and students experiencing workload, examination, career-transition, or adjustment pressures, in order to reduce modifiable academic and psychosocial stressors associated with depressive symptoms.
5. Tertiary-institution management should establish clear referral pathways linking campus counselling services with psychologists, psychiatrists, primary-care providers, and specialist mental health services for students with severe symptoms, functional impairment, or self-harm concerns, so as to promote continuity of care, appropriate clinical assessment, and safety management.
6. University management and student-support services should provide accessible digital and mobile-supported mental health resources for students who face barriers to conventional face-to-face services, in order to extend confidential access to mental health information, self-help resources, and professional support while complementing rather than replacing specialist care.



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