Research Article

The Prevalence of Depression, Anxiety, and Stress Among Undergraduate Nursing Students in the University for Development Studies, Tamale.

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Abstract

Background: Nursing students at the University for Development Studies encounter significant stress factors throughout their academic journey, contributing to both physical and mental health issues that has the potential to negatively impact their academic achievements. However, there is a scarcity of research focusing on depression, anxiety, and stress within this specific student population.

Objective: The aim of this study was to examine the prevalence and impact of depression, anxiety, and stress among nursing students in the University for Development Studies.

Methodology: Cross-sectional study was conducted at the Department of Nursing, School of Nursing and Midwifery, University for Development Studies. A simple random sampling of 400 undergraduate nursing students completed self-administered questionnaire on Depression, anxiety and stress measured by the short version of Depression, Anxiety and Stress Scale 21 (DASS-21).

Results: The sample consisted of 400 respondents made up of 41% male and 59% female students. The majority of the respondent were within the age range of 18 to 24 years. Most of the respondents met the cutoff point for clinical diagnoses of depression (58%), anxiety (58.4%) and stress related challenges (65%). Results showed a significant positive relationship between depression and anxiety (r = .767, p <.001), depression and stress (r = .722, p <.001) stress and anxiety (r = .904, p <.001). The findings of the study also revealed a concerning trend, as a high prevalence of symptoms related to depression, anxiety, and stress were observed among the study participants. The factors associated with depression, anxiety and stress were gender, age, academic year of the students, marital status, monthly family income, living arrangement and history of mental health support. The overall effect of depression, anxiety, and stress among undergraduate nursing students at the University for Development Studies (UDS) reveals that 50.8% of students report severe levels of these mental health problems.

Conclusion: Depression, anxiety and stress are highly prevalent among undergraduate nursing students and correlations between these variables are positive. The improvement of mental health services among nursing students is essential. The findings call for initiation of mental health screenings sessions for nursing students, training on stress management interventions and increased counseling facilities/opportunities for nursing students in the university and indeed the entire student population of the institution. This study recommends that mental health screening be part and incorporated into student's medicals in the University, which is a requirement for all fresh students.

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Introduction

Background to the study

The prevalence of depression, anxiety, and stress among university students is a significant and growing public health concern, necessitating the collection of epidemiological data (1). The educational journey itself is a highly stressful experience (31, 39), exposing university students to various academic, psychological, personal, and social stressors throughout their academic pursuits (25). According to (1), stress as a multi-dimensional phenomenon, plays a central role in this dynamic relationship. Depression, anxiety, and stress serve as crucial indicators of mental health, particularly within the university student population (55). Given the aforementioned challenges, university students often face a combination of physical, psychological, social, and academic demands, heightening their susceptibility to psychological distress, including depression, anxiety, and stress (25).

These problems lead to poor psychological wellbeing that interfere with learning and limits the academic performance of students (8, 7, 45, 53) and lower productivity, increase suicidal thoughts and minimize quality of life (31, 39). Nursing is one of the most stressful professions in the world (19, 35). Hence, adjusting to a nursing career is very stressful. Nursing students face stressful events in their study period that lead to negative consequences in their academic, psychological, professional and personal life (1, 11, 49). In addition to classroom learning, they have to acquire skills in wards and clinical settings, and undergo extensive evaluation processes consisting of theory and practical examinations that lead to a complex learning environment. Evidence indicates that there is an inverse relationship between stress and lack of professional knowledge and skills, poor patient care and clinical performance among nursing students (1). The measurement of depression, anxiety, and stress among university students has primarily relied on the use of the Depression, Anxiety, and Stress Scale (DASS) (27), with results often reported in terms of percentages and means. Various approaches have been employed to assess depression, anxiety, and stress, with differing findings on the prevalence of moderate to high levels of these conditions among university students across different populations (4, 5, 34, 49). Several studies have reported a prevalence rate of around 60% for depression, anxiety, and stress (1, 20, 36). It has been observed that in most studies, females tend to have higher mean scores for depression, anxiety, and stress compared to their males' counterparts (3, 13) although a few studies have reported higher scores among male students (4,9,10). However, in Jordan, the mean scores of depression, anxiety, and stress among university students were comparable to those of other cultural groups (ranging from 16.0 to 20.0), and female students had higher mean scores than males, which aligns with international findings (2). Studies have indicated a link between stress and various physical well-being factors, such as fatigue, nervousness, sleep disturbances, chest tightness, changes in appetite and weight, altered psychomotor speed, and decreased libido (14, 21, 29). However, there is limited research specifically focusing on mental health problems among undergraduate nursing students at the University for Development Studies, hence the aim of the study focuses on assessing the prevalence of the depression, anxiety and stress among the undergraduate nursing students of the University for Development Studies. No studies have explored the relationship between depression, anxiety, and stress in this population, and limited attention has been given to identifying factors associated with mental health problems. Consequently, the findings of this study can contribute valuable insights to nursing education and counselling practices.

Methodology

Research Design

The research employed a cross-sectional study design. This design allows for the collection of data at a specific point in time, providing a snapshot of the prevalence and factors associated with depression, anxiety, and stress among nursing students.

Study setting

University for Development studies is located in the Northern part of Ghana, specifically Tamale. The University for Development Studies (UDS) is Ghana's first public University in the North. It was established by the Government of Ghana by PNDC Law 279 and gazette on 15th May, 1992 with aims: to provide higher education to all persons suitably qualified and capable of benefiting from such education; to undertake research and promote the advancement and dissemination of knowledge and its application to the needs and aspirations of the people of Ghana; and to blend the academic world with that of the community in order to provide constructive interaction between the two for the total development of northern Ghana in particular and the country as a whole. The University currently has a multi-campus system with about six (6) Schools/Faculties, three (3) Institutes and 4 Centers (including two Centers of Excellence), with the current population ranging 20,000-24,999. One of the 6 faculties/schools is the School of Nursing and Midwifery where this research was conducted at the Tamale campus specifically focusing on the nursing students enrolled in the university's programs. As a national University, its uniqueness is based on its location and multi-campus system, its vision and pro-poor nature which aims at addressing the conditions and structural causes of poverty. Its community-technical-interface programme which combines academic work and community-based field practical works

known as the Third Trimester Field Practical Programme (TTFPP) and Community Based Education and Service (COBES) make the University unique.

The University's multi-campus system includes, Tamale Campus, which accommodates the Central Administration, School of Medicine (SoM), School of Allied Health Sciences (SAHS), School of Nursing and Midwifery (SoNM), School of Public Health (SPH), School of Pharmacy and Pharmaceutical Sciences (SPPS) and Faculty of Education (FoE) and Desert Research Institute (DRI). The Nyankpala Campus is place where you can find Faculty of Agriculture, Food and Consumer Sciences (FoAFCS), Faculty of Natural Resources and Environment (FNRE), Faculty of Biosciences (FoB), School of Engineering (SoE), West African Centre for Water, Irrigation and Sustainable Agriculture (WACWISA) and West African Centre for Sustainable Rural Transformation (WAC-SRT). In the Tamale City Campus is the place for the Graduate School, Institute of Interdisciplinary Research (IIR), Institute of Distance and Continuing Education (IDCE), Colleges of Education Affiliation and Business Innovation and Incubation Centre (BIIC). Tamale North Campus is home to School of Applied Economics and Management Sciences (SAEMS) and the Eastern Campus located in Yendi is the site for Faculty of Communication and Cultural Studies (FCCS) and Faculty of Sustainable Development Studies (FoSDS), Centre for Culture, Heritage and African Studies (CCHAS) and Centre for Peace and Security Studies (CePSS).

The oldest Faculty of the University remains the Faculty of Agriculture, Food and Consumer Sciences (FoAFCS). The University currently runs both graduate and undergraduate programmes at the various campuses as well as community-outreach activities and research programmes geared towards creating an enabling environment for sustainable community development and economic growth. The University's Directorate of Community Relations and Outreach Programmes (DCROP) has the mandate of rolling-out its community-technical-interface programme which includes TTFPP, COBES, Teaching Practice and a Homestay Programme for international students.

Study population

The target population for this research was undergraduate nursing students from the University for Development Studies, School of Nursing and Midwifery. There are more than 3000 individuals in this category. The population of interest for this study includes nursing students at the University for Development Studies (UDS). The sample consisted of students enrolled in various levels of the nursing programs (undergraduate). The study ensured a representative sample that accurately reflects the diversity of the nursing student's population at UDS in terms of age, gender, and other relevant demographic characteristics.

Inclusion Criteria

The study included students currently enrolled in the nursing programs at the University for Development Studies. All levels of study: students from both undergraduate generic and sandwich programs were included. Also, nursing students of the University for Development Studies who voluntarily agreed to participate in the study were included.

Exclusion Criteria

Non-nursing students from other academic programs at the University for Development Studies were excluded from the study. Participants who provided incomplete or inconsistent responses in the survey were excluded from the final analysis. Also, Participants who did not provide informed consent to participate in the study were also excluded. Individuals who also decline to participate were excluded.

Target population

The research was conducted in School of Nursing and Midwifery (SoNM) in UDS, Tamale. The respondents of the research constituted both male and female students. A total of 400 respondents were selected for the research.

Sample size and sample size determination

The sample size was derived by application of the formula proposed by (32) at 95% confidence level which reads; $n = N/(1+N(a)2)$. Thus, n- desired sample size, N- target population, a- level of statistical significance of 0.05, 1-is a constant. Using an approximate population of a 1000 Student nurses in the University for Development Studies. It comprised of students from all the generic nursing classes and all sandwich nursing classes.

Therefore, the sample size, $n = 1000/(1 + 1000(0.05)2) = 399.6 = 400$

The calculated sample size of 400 was increased by 10% in order to ensure sample size is not less than the calculated sample size of 400 after data collection and data cleaning. 10% of 400 which is 40, was added to 400 to obtain the final sample size for the study which is 440. The 10% will cover any uncertainties that may arise (6).

Sampling Techniques

In selecting the participants, a simple random sample technique was used. It gives an equal chance for each student of the school of been selected. (40,41). The sample frame of each of the nursing level was obtained by list of all nursing student in that level. Then, sequential numbers assigned to each of the respondent to form the sample frame. A random number generator was used to generate random numbers and register the name in the sample frame corresponding to the numbers to constitute the sample for that particular level. This continued until the required number was met for the data collection.

Sources of Data

The researchers used a structured questionnaire to assess the level of depression, anxiety and stress among undergraduate nursing students at UDS. Participants were administered the questionnaire in person. Relevant literature on mental health and psychology among students (both published and unpublished) comprised secondary sources of information.

Data Collection Instrument

Data was collected using a questionnaire. In the work of (37,55), questionnaire is a set of printed or written online questions with choice of answers, devised for the purposes of a survey or statistical study. Questionnaire was chosen for this study because it enabled us to contact a large number of respondents quickly and efficiently.

The instrument consists of two sections: Section 1 (Demographic characteristics), Section 2 (Depression, Anxiety and Stress Scale – DASS-21). The Depression Anxiety and Stress Scale version 21 (DASS-21) was developed by Lovibond and Lovibond in 1995 at the University of New South Wales (Australia) (27,28). The test was developed using a sample of responses from the comparison of 504 sets of results from a trial by students, taken from a larger sample of 950 first-year university student responses. This instrument has been validated and used in other studies in Ghana. The structure of negative emotional states, is in comparison of with the Beck depression and anxiety inventories (27).

Data Collection Procedure

The structured questionnaire was personally administered to participants during the data collection phase. Prior to this, participants were briefed on the study's purpose and significance, with their voluntary participation emphasized. This approach guaranteed that participants understood the study's objectives, enabling them to make informed decisions about their involvement.

The administration of the questionnaire took place during school hours, a convenient time for the majority of participants. This timing minimized disruptions to their routines and allowed them to complete the questionnaire within their scheduled time. This strategy not only increased response rates but also reduced the likelihood of non-response bias.

Conducting data collection during school sessions ensured efficiency and enabled participants to seamlessly integrate the questionnaire into their schedules. The personal interaction during the process allowed researchers to promptly address any queries or concerns participants may have, ensuring the accuracy and comprehensiveness of the data collected.

Furthermore, the in-person approach fostered a personal connection between researchers and participants, potentially building a sense of trust and collaboration. This interpersonal engagement may have encouraged participants to provide truthful responses, contributing to the overall reliability of the collected data.

Data Analysis Process

The collected data was organized before been entered and analysed by Statistical Package for Social Science (SPSS) software version 27. The responses to 400 questionnaires returned, was edited, coded and scored using SPSS version 27.0 the editing procedure was used to check whether respondents followed instructions correctly and to check if all items on the questionnaire were responded to.

Reliability and Validity of Data

The reliability and validity of the data was ensured by conducting a pretest of the structured questionnaire on a small sample of students at the school of medicine. The pretest assessed the clarity, comprehensiveness, and consistency of the questionnaire among the local context since the tool was adopted.

Ethical Consideration

Ethical clearance

The study got ethical approval from the University for Development Studies Institutional Review Board (UDSIRB) before the start of the study.

Permission from study area

As part of the research process, permission was sought from the School authorities from the the school of nursing and midwifery as the study sites. The protocol was presented with the participant information sheet to keep the authorities abreast with the kind of data to be collected. Copies of clearance letters and permission to proceed with the study were available To Whom It May Concern.

Anonymity and confidentiality

The researchers ensure anonymity by not recording the names of participants. Participants were assured of confidentiality and anonymity that under no circumstance will their names and other details be linked to the data analysis and dissemination of findings of the study. The participants responses were given IDs. Identifiers such as names, phone numbers, and addresses, among others were not part of data to be collected. Data management, storage, analysis and reporting were done using IDs which did not exposed the participants.

Voluntary Participation and Withdrawal from study

All study procedures were clearly explained to participants in order to obtain informed consent. It was made known to them that the study is voluntary and they could decide to withdraw from the study at any time without any harm.

Results

The present study conducted an analysis on the prevalence of depression, anxiety and stress among undergraduate nursing students in UDS, Tamale in the Northern Region of Ghana. Results are presented below;

Demographic Features of the Respondents

These results in figure 1 provide an overview of the demographic characteristics of the students who participated in the study.
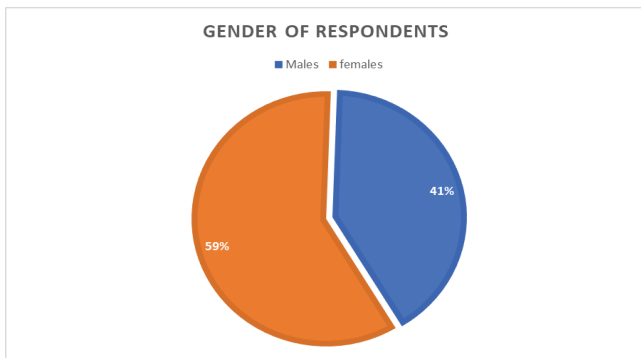

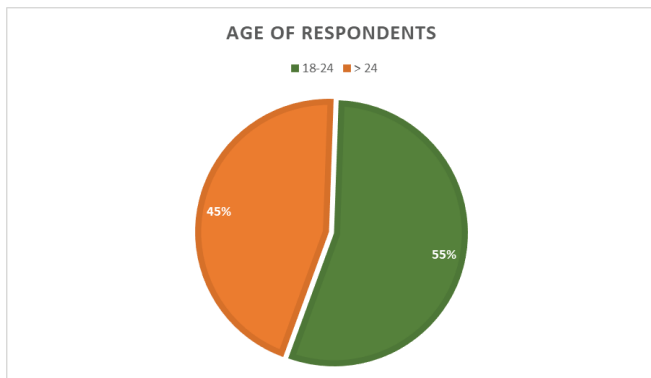**Figure 1:** Gender Distribution of Respondents (Source: Field Data, 2023).

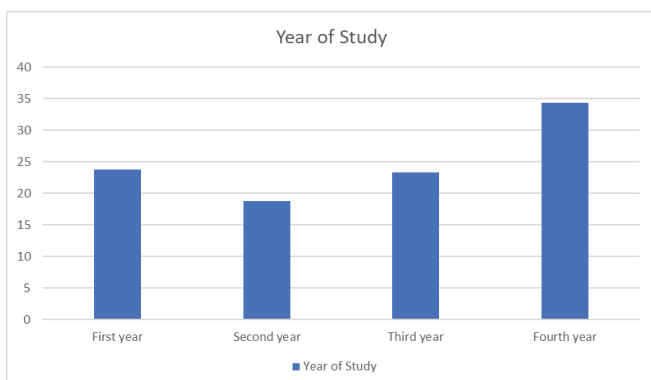**Figure 2:** Age of respondents (Source: Field Data, 2023)

Figure 3: The distribution of academic years (Source: Field Data, 2023).

Table 1: Socio demographic characteristics of the respondents

Demographic characteristic		Number	Percentage %
Gender			
	Male	163	41.0
	Female	237	59.0
Age			
	18-24	220	55.0
	>24	180	45.0
Program of Study			
	Nursing only	400	100.0
Year of Study			
	First year	95	23.8
	Second year	75	18.8
	Third year	93	23.3
	Fourth year	137	34.1
Marital Status			
	Single	319	79.8
	Married	81	20.2
Monthly Income range			
	Less than GhȻ500	46	11.5
	GhȻ600 to GhȻ1000	187	46.8
	Greater than 1000	167	41.7
Living Arrangement			
	with family	57	14.3
	On-campus	283	70.7
	Off-campus	46	11.5
	Alone	14	3.5
Have you received any mental health support or counselling in the past?			
	Yes	101	25.2
	No	299	74.8

Table 2: Distribution of depression, anxiety and stress among the respondents.

Category		n	%	Mean ± SD
Depression				12.90 ± 7.62
	Normal	110	27.5	
	Mild	58	14.5	
	Moderate	145	36.2	
	Severe	77	19.3	
	Extremely Severe	10	2.5	
Anxiety				12.54 ± 8.05
	Normal	117	29.3	

Citation: Peter Mintir Amadu, Rejoice Enyonam Hoedoafia, George Dassah, Laar Kantam Cletus, Sophia Ewuenye Adwoa Kpebu, Millicent Aarah-Bapuah, Vivian Kapio Abem. The Prevalence of Depression, Anxiety, and Stress Among Undergraduate Nursing Students in the University for Development Studies, Tamale. Fortune Journal of Health Sciences. 7 (2024): 178-191.

Mild	49	12.3	
Moderate	98	24.5	
Severe	15	3.8	
Extremely Severe	121	30.1	
Stress			13.70 ± 8.75
Normal	112	28.0	
Mild	28	7.0	
Moderate	148	37.0	
Severe	100	25.0	
Extremely Severe	12	3.0	

Table 3: Relationship between depression, anxiety and stress among the respondents.

	Depression	Anxiety	Stress
Depression	1		
Anxiety	0.767**	1	
Stress	0.722**	0.904**	1
**Correlation is significant at the 0.01 level (2-tailed).			

Table 4: Factors associated with depression among the respondents

Variable		No depression	Mild to extremely severe depression	P value
Gender				< 0.001
	Male	72	91	
	Female	65	172	
Age				< 0.000
	18-24 years	58	162	
	>24 years	79	101	
Year of Study				< 0.000
	First year	29	66	
	Second year	22	53	
	Third year	15	78	
	Fourth year	71	66	
Marital Status				< 0.000
	Single	94	225	
	Married	43	38	
Monthly Income range				< 0.000
	Less than Gh₵500	7	39	
	Gh₵600to Gh₵1000	53	134	
	Greater than 1000	77	90	
Living Arrangement				< 0.035
	with family	15	42	
	On-campus	92	191	
	Off-campus	23	23	
	Alone	7	7	
Have you received any mental health support or counselling in the past?				< 0.041
	Yes	43	58	
	No	94	205	

Table 5: Factors associated with anxiety among the respondents

Variable		No Anxiety	Mild to extremely severe Anxiety	P value
Gender				< 0.411
	Male	44	119	
	Female	73	164	
Age				< 0.006
	18-24 years	52	168	
	>24 years	65	115	
Year of Study				< 0.000
	First year	22	73	
	Second year	9	66	
	Third year	36	57	
	Fourth year	50	87	
Marital Status				< 0.001
	Single	81	238	
	Married	36	45	
Monthly Family Income range				< 0.000
	Less than Gh₵500	7	39	
	Gh₵600to Gh₵1000	32	155	
	Greater than 1000	78	89	
Living Arrangement				< 0.000

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	with family	36	21	
	On-campus	65	218	
	Off-campus	16	30	
	Alone	0	14	
Have you received any mental health support or counselling in the past?				< 0.098
	Yes	23	78	
	No	94	205	

	Yes	58	43
	No	165	134

Table 6: Factors associated with stress among respondents

Variable		No Stress	Mild to extremely Severe Stress	P value
Gender				< 0.000
	Male	108	55	
	Female	115	122	
Age				< 0.000
	18-24 years	95	125	
	>24 years	128	52	
Year of Study				< 0.000
	First year	37	58	
	Second year	29	46	
	Third year	57	36	
	Fourth year	100	37	
Marital Status				< 0.000
	Single	159	160	
	Married	64	17	
Monthly Family Income range				< 0.048
	Less than GhȻ500	22	24	
	GhȻ600 to GhȻ1000	96	91	
	Greater than 1000	105	62	
Living Arrangement				< 0.001
	with family	36	21	
	On-campus	143	140	
	Off-campus	30	16	
	Alone	14	0	
Have you received any mental health support or counselling in the past?				< 0.695

Table 7: Effects of depression, anxiety and stress among respondents

Variable		Moderate	Severe	Extremely severe	P value
Gender					< 0.000
	Male	114	22	27	
	Female	115	42	80	
Age					< 0.000
	18-24 years	101	45	74	
	>24 years	128	19	33	
Year of Study					< 0.000
	First year	43	16	36	
	Second year	37	16	22	
	Third year	50	10	33	
	Fourth year	99	22	16	
Marital Status					< 0.000
	Single	165	56	98	
	Married	64	8	9	
Monthly Family Income range					< 0.000
	Less than GhȻ500	14	19	13	
	GhȻ600 to GhȻ1000	95	34	58	
	Greater than 1000	120	11	36	
Living Arrangement					< 0.000
	with family	36	0	21	
	On-campus	149	56	78	
	Off-campus	30	8	8	
	Alone	14	0	0	
Have you received any mental health support or counselling in the past?					< 0.001
	Yes	65	4	32	
	No	164	60	75	

Note: Mean ± SD = 22.25 ± 16.17

Citation: Peter Mintir Amadu, Rejoice Enyonam Hoedoafia, George Dassah, Laar Kantam Cletus, Sophia Ewuenye Adwoa Kpebu, Millicent Aarah-Bapuah, Vivian Kapio Abem. The Prevalence of Depression, Anxiety, and Stress Among Undergraduate Nursing Students in the University for Development Studies, Tamale. Fortune Journal of Health Sciences. 7 (2024): 178-191.
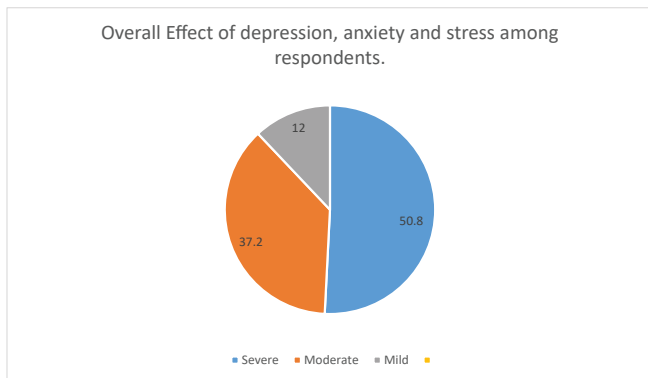
Figure 4: Overall impact of depression, anxiety and stress among respondents.

Discussion of Results

This study focused on nursing students at the University for Development Studies, examining the prevalence of depression, anxiety, and stress, along with their interrelationships and associated factors. The findings revealed a concerning trend, as a high prevalence of symptoms related to depression, anxiety, and stress were observed. Specifically, the majority of respondents reported experiencing moderate to extremely severe symptoms of depression (58.0%), anxiety (58.4%), and stress (65%). This alarming prevalence raises concerns about an elevated risk of psychiatric morbidity among nursing students, consistent with similar studies conducted in other countries (22, 24, 39, 44, 46). The total sample consisted of 400 undergraduate nursing students consisting of 41% males and 59% females. Significant proportion (55.0%) fell within the 18-24 age group, with the remaining 45.0% being older than 24 years. The distribution of academic years varied, with 23.8% in their first year, 18.8% in the second year, 23.3% in the third year, and the largest group, at 34.1%, in the fourth year of their study. In relation to marital status, the majority (79.8%) reported being single, while a notable portion (20.2%) were married. The participants exhibited diverse socio-economic backgrounds, with 11.5% having a monthly income less than GHC 500, 46.8% falling within the income range of GHC 600 to GHC 1000 and 41.7% earning more than GHC 1000. When it came to living arrangements, 70.7% of the respondents lived on-campus, 14.3% resided with their families, 11.5% lived off-campus, and 3.5% lived alone. About 25.3% of the nursing students have received mental health support or counselling in the past. The internal consistency of the sub scales of DASS-D, DASS-A and DASS-S were tested for Cronbach's alpha. It showed a coefficient of 0.948, 0.835 and 0.868 respectively, indicating these scales were reliable. This study presents a snapshot of participants' mental health status, including their levels of depression, anxiety, and stress, along with corresponding mean scores and standard deviations (SD).

On the average, participants scored 12.90 in the depression assessment, with some variation (±7.62). Notably, around 27.5% of participants fell into the "Normal" category, indicating minimal or no depressive symptoms. However, a substantial portion experienced varying degree of depression, with 14.5% categorized as "Mild," 36.2% as "Moderate," 19.3% as "Severe," and 2.5% as "Extremely Severe". Cumulatively, 58.0% met the clinical diagnosis of depression.

Also, on average, participants scored 12.54 on the anxiety scale, with some variability (± 8.05). A significant 30.3% of participants were in the "Extremely Severe" category, indicating high levels of anxiety. The distribution also included participants in the "Normal" (29.3%), "Mild" (12.3%), "Moderate" (24.5%), and "Severe" (3.8%) anxiety categories, reflecting diverse anxiety levels experiences by the respondents. Cumulatively, 58.4% met the clinical diagnoses of anxiety.

The average stress score was 13.70, with a degree of variability (± 8.75). Majority (37.0%) were classified as "moderate," suggesting some level of stress among the students. However, participants were distributed across other categories, including "Mild" (7%), "Normal" (28%), "Severe" (25%), and "Extremely Severe" (3%), showcasing a range of stress levels. Cumulatively, 65% of the students had level of stress that could be described as been detrimental to their mental health and functionality if nothing concrete is done about it, which could lead to the clinical diagnosis of stress related mental health challenges. It is known that most of the modern-day health conditions has their origin in stress and so the high level of stress recorded among the students is of a great concern needing further attention from the authorities and stakeholders. Spearman correlation found that a significant positive relationship between depression and anxiety ($r = .767$, $p <.001$), depression and stress ($r = .722$, $p <.001$) stress and anxiety ($r = .904$, $p <.001$). The relationship between gender and depression levels is highly significant ($P < 0.001$), indicating that gender plays a significant role in influencing depression. Age also shows a highly significant relationship with depression ($P < 0.001$), suggesting that different age groups may experience varying levels of depression.

The year of study is highly significant in its association with depression ($P < 0.001$), implying that the academic year of the respondents significantly influences depression levels. Marital status demonstrates a highly significant relationship with depression ($P < 0.001$), indicating that whether individuals are single or married can significantly impact their depression levels. The monthly income range of respondents is highly significant concerning depression ($P < 0.001$), suggesting that income has a substantial influence on depression levels. While living arrangement also influences depression, the relationship is statistically significant but

slightly weaker (P < 0.035) compared to other factors. Lastly, there is a significant relationship between a history of mental health support or counselling and depression (P < 0.041), though the association is somewhat weaker compared to other demographic factors.

The relationship between gender and anxiety levels is not statistically significant (P > 0.411), suggesting that gender may not significantly influence anxiety in this context. Age shows a significant relationship with anxiety (P < 0.006), implying that different age groups may experience varying levels of anxiety. The year of study is highly significant in its association with anxiety (P < 0.000), indicating that the academic year of the respondents significantly influences anxiety levels. Marital status demonstrates a significant relationship with anxiety (P < 0.001), suggesting that whether individuals are single or married can significantly impact their anxiety levels. The monthly income range is highly significant concerning anxiety (P < 0.000), suggesting that income has a substantial influence on anxiety levels. Living arrangement is highly significant in its association with anxiety (P < 0.000), indicating that where individuals live significantly influences their anxiety levels. The relationship between a history of mental health support or counselling and anxiety is not statistically significant (P > 0.098), suggesting that this factor may not have a strong influence on anxiety levels in this context.

There was significant associate between stress and gender (p< 0.000). Age (p< 0.000), marital status (p< 0.000), Year of Study (p< 0.000), living arrangements (p< 0.001) and monthly family income range (p< 0.048). However, the was no association between stress and history of mental health support or counselling (p< 0.695).

When the effects of depression, anxiety and stress among respondents was analyzed, the analysis reveals significant variations in the distribution of respondents across different depression, anxiety, and stress levels by gender (p < 0.000), with more females exhibiting severe and extremely severe depression, anxiety, and stress. Age also plays a substantial role (p < 0.000), with respondents aged 18-24 reporting higher levels of severe and extremely severe depression, anxiety, and stress compared to those over 24 years old.

Additionally, the year of study demonstrates significant differences (p < 0.000), as third-year students tend to experience higher levels of severe and extremely severe depression and anxiety. Marital status is associated with varying levels of depression, anxiety, and stress (p < 0.000), with single respondents more likely to experience severe and extremely severe depression, anxiety, and stress compared to married respondents. Monthly income significantly impacts reported levels of these mental health concepts (p < 0.000), as respondents with incomes over 1000 Gh₵ tend to report lower

levels of severe and extremely severe depression, anxiety, and stress. Living arrangement also plays a substantial role (p < 0.000), with on-campus residents exhibiting higher levels of severe and extremely severe depression, anxiety, and stress than those living with family or off-campus.

Furthermore, prior mental health support or counselling significantly affects the levels of depression, anxiety, and stress (p < 0.001), with those who have received support reporting lower levels of severe and extremely severe depression, anxiety, and stress.

In summary, the analysis underscores how various demographic factors influence the reported levels of depression, anxiety, and stress among the respondents. The overall effect of depression, anxiety, and stress among undergraduate nursing students at the University for Development Studies (UDS) reveals that 37.2% of students report normal levels of these mental health factors. Additionally, 12% of students report mild levels, while a significant 50.8% report severe levels of depression, anxiety, and stress. This data highlights the presence of significant mental health challenges among the surveyed nursing students, particularly in the form of severe levels of these conditions.

Furthermore, our study uncovered a significant and positive association between depression, anxiety, and stress, which aligns with the findings of previous international studies (12, 31. 39). This strong correlation underscores the heightened risk of psychiatric morbidity among nursing students. These negative emotional symptoms not only affect psychological well-being but also interfere with learning and limit academic performance. Recognizing students in poor psychological states early is crucial for enhancing their mental health. It is widely acknowledged that untreated mental health issues can escalate into psychiatric illnesses. Given the pivotal role of nurses in the healthcare system, the poor mental health status of nursing students has far-reaching implications for the future health and development of the country. Therefore, prioritizing interventions to enhance the mental health of nursing students is imperative.

Our study found that the gender of the participants was significantly associated with depression and stress. This indicates that there is a significant difference in depression and stress levels between males and females. Females are more likely to experience moderate to extremely severe depression and stress compared to males. Gender as a variable is consistent with other research studies (16, 38, 53). This study also found age and year of study of participants was significantly associated with depression, anxiety and stress (DAS). This indicates that different age groups may experience varying levels of depression. In this case, individuals aged 18-24 years appear to have higher levels of DAS compared to those above 24 years and also, fourth-year students seem to experience higher levels of depression

compared to other academic years. This finding was consistent with other research work (18, 26, 30). Moreover, our study found that marital status, monthly income range and living arrangement were significantly associated with DAS. This suggests that income has a substantial influence on depression levels. Those with a monthly income between GHC 600 and GHC1000 seem to have higher levels of DAS. Also, single individuals and those with a monthly income between GHC 600 and GHC1000 seem to have higher levels of DAS. This result is consistent with findings of previous studies conducted in other countries (16, 26, 33, 42, 43, 50, 53). History of Mental Health Support or Counselling was also found to be significantly associated with depression. Those who have received mental health support in the past are more likely to have higher levels of depression. This could be due to the awakened of their consciouness towards their mental health following their previous experiences. It was well known that individual with good level of mental health literacy turn to report mental health issues better then those with low level of mental health literacy. This signifies the need to to improve mental health literacy towards a better reporting of mental health challenges among students.

Regarding impact of depression, anxiety and stress among nursing students of the University for Development Studies. Females, respondents aged 18-24, third-year students, single individuals, respondents with monthly incomes below GHC 1000, on-campus residents, and individuals with a history of mental health support were reported to have moderate to severe level of depression, anxiety and stress. These were consistent with other research studies (15, 17, 23, 47, 51). The overall effect of depression, anxiety, and stress among undergraduate nursing students at the University for Development Studies (UDS) reveals that 37.2% of students report normal levels of these mental health factors, while 12% of student's report mild levels abd a significant 50.8% report severe levels of depression, anxiety, and stress. This data highlights the presence of significant mental health challenges among the surveyed nursing students, particularly in the form of severe levels of these conditions needing the attention of authorities and stakeholders.

Summary

Nursing students at the University for Development Studies encounter significant stress factors throughout their academic journey, contributing to both physical and mental health issues that has the potential to negatively impact their academic achievements. The experiences of academic, personal, psychological, and social stress can be devastating for their academic goals. Learning is an extremely demanding process. Stress is seen as a multifaceted phenomenon that centers on a dynamic interaction between people and their surroundings. The issues with stress, anxiety, and depression signify a conglomerate state of unfavorable emotional sensations, which can affect their physical, psychological, spiritual, economical and emotional health as well as their academic performance.

The Depression, Anxiety and Stress Scale (DASS-21) was used to measure depression, anxiety, and stress among this sample population.

The sample consisted of 41% male and 59% female students. The majority of the respondent were within the age range of 18 to 24. Most of the respondents reported moderate to severe symptoms of depression (58%), anxiety (58.4%) and stress (65%). It showed a significant positive relationship between depression and anxiety ($r = .767$, $p < .001$), depression and stress ($r = .722$, $p < .001$) stress and anxiety ($r = .904$, $p < .001$). The factors associated with depression were gender, age, academic year of the students, marital status, monthly family income, living arrangement and history of mental health support; the factors associated with anxiety were age, academic year of the students, marital status, monthly income and living arrangement and the factors associated with stress were gender, age, academic year of the students, marital status, monthly income and living arrangement. The overall effect of depression, anxiety, and stress among undergraduate nursing students at the University for Development Studies (UDS) reveals that 50.8% of students report severe levels of these mental health challenges. Undergraduate nursing students frequently experience depression, anxiety, and stress, and there are strong positive correlations between these variables. It is crucial that nursing students' mental health improve for a better functioning and development. The findings recommend starting stress management programs and expanding counseling services for nursing students. The study further recommends that mental health screening be part and incorporated into student's medicals in the University, which is a requirement for all fresh students.

Limitation

No recognized limitations were found while conducting this research.

Conclusion

This research has shed light on the high prevalence of depression, anxiety, and stress among student nurses. These findings underscore the importance of addressing the mental health needs of this crucial potential healthcare workforce. Student nurses face a unique set of stressors, including academic demands, clinical responsibilities, financial concerns, and personal challenges, all of which contribute to their mental health struggles. To ensure the well-being of the future nursing professionals and the quality of healthcare they provide, it is imperative that educational institutions, healthcare organizations, and policymakers take proactive steps to support student nurses' mental health and well-being.

By implementing the recommended strategies, we belief can create a healthier and more resilient future nursing workforce, ultimately benefiting both the student nurses themselves and the patients they are serving or will serve in the near future. It is our hope that this research serves as a catalyst for positive change within professional nursing education and practice. This study recommends that mental health screening be part of students' medicals in the University. This call is to help identify issues early, provide timely interventions, destigmatize seeking help, enhance academic performance, and foster a supportive campus culture.

Recommendations

These recommendations aim to address the multifaceted challenges of depression, anxiety, and stress among nursing students by combining policy changes, scientific advancements, and practical interventions to create a more supportive and resilient learning environment for students in general and specific to the study sitting regarding steps to take to prioritize the mental well-being of their nursing students towards their holistic development. On the part of policy recommendation, our study is calling for integration of mental health support programs in Nursing education Institutions. Advocating for the implementation of comprehensive mental health support programs within nursing education institutions. These programs should include regular mental health screenings, counseling services, and workshops on stress management and coping strategies. Encourage policies that prioritize the mental well-being of nursing students, recognizing the unique stressors they face in their academic and clinical environments. This may involve collaborating with relevant health authorities to develop guidelines and standards for mental health support in nursing schools.

Regarding scientific research, we need to investigate effective interventions for reducing depression, anxiety, and stress among Nursing Students, which will serve a positive step in the right direction. Allocate research funding to investigate evidence-based interventions specifically tailored to address depression, anxiety, and stress among nursing students and students in general. This research should explore the effectiveness of various psychological, educational, and support interventions in mitigating these mental health challenges. Promote interdisciplinary research collaborations between psychologists, educators, and healthcare professionals to gain a holistic understanding of the factors contributing to mental health issues in nursing students and identify innovative solutions.

On practice enhancement, there is the need to implement holistic wellness programs and resilience training for Nursing Students. Integrate wellness programs into nursing curricula that focus on physical, mental, and emotional well-being. These programs should incorporate strategies such as mindfulness, self-care, and resilience training to equip nursing students with effective tools for managing stress and promoting mental health. Encourage healthcare institutions to prioritize the mental health of their nursing student by providing access to mental health resources and an enabling environment. Creating a supportive environment can positively impact the mental well-being of nursing professionals, ultimately benefiting both students and practicing nurses.

Specific to the study setting, it is worth noting that if they will implement these underlisted recommendation the institution will become the most favorably place for nursing education in the country and beyond.

1. Implement Mental Health Support Programs. The Universities and nursing school should collaborate with mental health professionals to provide counseling services and workshops aimed at managing and reducing symptoms of depression, anxiety, and stress. Based on the findings of this study, it is crucial for the University authorities including the School of Nursing and Midwifery to implement mental health support programs specifically tailored for student nurses. These programs should be readily accessible, confidential, and destigmatized to encourage students to seek help when needed.

2. Integrate Mental Health Education into the Curriculum. Nursing education curricula should incorporate modules on mental health, self-care, and stress management. By equipping student nurses with the knowledge and skills to recognize and address their own mental health needs, we can promote a culture of self-awareness and self-care within the nursing profession.

3. Foster a Supportive Learning Environment. The University as an Educational institution should create a supportive and empathetic learning environment for student nurses. Faculty members and clinical preceptors should be trained to recognize signs of distress in students and provide appropriate support. Encouraging peer support networks and mentorship programs can also be beneficial in reducing feelings of isolation.

4. Address Financial Stressors. Recognizing that financial concerns are a significant source of stress for student nurses, the institution should explore options for financial aid, scholarships, or part-time employment opportunities within the healthcare system to alleviate financial burdens.

5. Regular Mental Health Screening. Incorporate routine mental health screening as part of the student nurses' academic journey. Early identification of mental health issues can lead to timely interventions and support. The University should as part of the screening for fresh students include mental health/psychological assessment for all new students in every academic year. This will aid

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the identification of students with challenges and to put in place interventions to support them toward successful completion of the academic programs.

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