Research Article

Depression, Anxiety and Stress among Tertiary Students in a Low Socio-Economic Setting

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Abstract

Background: Globally an estimated 970 million people suffer from mental health problems including depression, stress and anxiety. Out of these numbers, about 280 million are affected with depression alone. Psychological challenges including depression, anxiety and stress are issues of major health concern globally. The World Health Organization (WHO), estimate that 3.8% of the world population suffer depression and its related challenges, including 5.0% among adults and 5.7% among adults older than 60 years. The objective of the study was to assess the level of depression, anxiety and stress among students of the University for Development Studies.

Method: A descriptive cross-sectional design was employed using cluster sampling technique to recruit final year students of the University for Development Studies into the study. A standardized questionnaire (DASS 21) was administered to a total of 229 students who were recruited using purposive sampling approach after they were clustered according to their levels of study.

Results: Overall, 229 students participated in the study with majority (51.1%) being females and 61% aged between 18-25 years. Also, 98% of the students were in their final year with most of them (68%) being Christians. The results further showed that 23% of the students experienced extremely severe levels of stress with additional 19% experiencing extremely severe levels of anxiety. Finally, 18% of the students experienced extremely severe levels of depression.

Conclusion: This study recognizes the fact that pressures often associated with studies in the Tertiary levels especially among final year students expose them to serious challenges including stress, anxiety and depression requiring the need to institute intervention in tertiary schools that would help reduce these challenges.

Keywords: Depression, Anxiety, Stress, Students

Background

Psychological problems including depression, anxiety, and stress are becoming more common among the general public in today's demanding culture(1). In 2019, 1 in every 8 people, or 970 million people around the world were living with a mental disorder, with anxiety and depressive disorders the most common (8). In 2020, the number of people living with anxiety and depressive disorders rose significantly because of the COVID-19 pandemic. During the most critical time in their lives, students go through

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a lot of difficult situations that can lead to psychological problems like stress, anxiety, and melancholy. Anxiety is the body's reaction to a perceived threat that is set off by a person's beliefs, feelings, and ideas, whereas depression is defined by sadness, guilt feelings, poor self-worth, and lack of interest or enjoyment(2). Conversely, stress is a sensation that arises when someone believes that the resources, they have mobilized are insufficient to meet the demands (3).

An estimated 970 million individuals including students worldwide experience mental health issues, including depression, anxiety and stress (4). Out of these numbers, about 280 million are affected with depression alone (5,8). The World Health Organization (WHO) estimate that 3.8% of the world population suffer depression and its related challenges. Additionally, an estimated 450 million people worldwide struggle with mental health issues such as worry, stress, and depression including 5.0% among adults and 5.7% among adults older than 60 years (6). Further data show that the about 280 million of those who suffer from depression are people in their school going ages (7).

According to Canadian undergraduate research, 30% of students suffer from psychiatric disorders (8). Furthermore, more than half of American pupils, as well as students in Australia, Malaysia, and the United States, report having mental health issues (9). Depression, anxiety, and stress were reported to affect 27.1%, 47.1%, and 27.1% of Turkish citizens, respectively (10). In Africa, for example, depression, anxiety, and stress are serious problems. For instance, a study conducted among students in Africa revealed that 29.19 million people (9 percent of 322 million) suffer from depression, with over 7 million (3.9 percent of 322 million) living in Nigeria (11). Subsequent research indicates that the general prevalence of depression (48 percent) in Africa was similar to the prevalence of anxiety. In all, 301 million people, or 58 million children and adolescents, experienced an anxiety disorder in 2019 (12). Ten percent of men and five percent of women suffer from depression (3.6 percent). The lowest prevalence is 2.6% among men in the Western Pacific Region and 5.9% among women in the African Region.

Numerous research conducted in Ghana have evaluated mental health concerns. When they looked at how social support affected students' levels of depression, anxiety, and stress, they discovered that a significant percentage of students reported depression (57%), anxiety (84%) and stress (49%) (13). Individuals dealing with these psychological issues could find it difficult to maintain a normal job schedule or go to social gatherings. Signs such as trouble focusing, memory problems, and difficulty making decisions could be the cause of this (14). The affected person could go through a lot of distress and do badly at work, school, and in the family. Some people may abuse alcohol or other substances when they are sad, nervous, or agitated, which may result in more dangerous behavior. When these psychological difficulties arise, an individual may deliberately try to hide or avoid talking about their feelings (15). An obsession with suicidal or self-harming thoughts can also develop in people who are depressed, stressed, or anxious(16). Annually, around 800 000 people lose their lives to suicide (17, 23). The fourth most common cause of mortality for people aged 15 to 29 is suicide (17). Anxiety is a chronic emotional response that has symptoms similar to depression, such as fatigue, wrath, insomnia, and tight muscles, but stress is usually caused by an external source and can be temporary (18). According to a poll of teenagers in 17 nations, 1 in 20 respondents said they had experienced a depressive episode on average (19). It is the fourth largest contributor to the worldwide burden of disease and the primary cause of disability (20).Mental health issues like depression, anxiety, and stress are major global health concerns.

Despite the efforts undertaken to solve this issue, not many encouraging results have been seen, particularly in emerging nations like Ghana and those in Africa. In Ghana, mental health difficulties are a significant health concern. The Ghana Mental Health Authority was established in response to efforts to lower the high rates of mental health issues, such as depression, anxiety, and stress. The authority's primary responsibility is to address mental health issues in Ghana through the creation of policies like the 2019–2022 mental health strategic plan (13). The implementation of the Ghana mental health policy, which aims to reduce mental health challenges by 2030, was one of the additional initiatives (21).

While government has created a plethora of policies aimed at addressing mental health issues, scientific studies has shown mixed results, particularly when it comes to students. In Amu et al (2021) cross-sectional survey, for example, the majority of Ghanaian university students reported psychological symptoms of depression, anxiety, and stress (49 percent, 84 percent, and57 percent, respectively) (13). This study was carried out to assess the levels of depression, anxiety and stress levels among students in a Tertiary institution in low-and-middle-income setting.

Methods

Design

A cross-sectional institutional-based descriptive design was used in this study. The Depression, Anxiety and Stress Scale (DASS 21) was entered into a google form and shared through the targeted class WhatsApp platforms for them to answer. The study participants were students in the fourth years of three academic courses.

Study Population

The population for this study were final year Nursing

students in the University. The total population of final nursing students was 545 students. This included those who had not practiced before and those who were practicing and doing a top-up for the degree program. Those in lower levels were not included in this study because they were in the vacation period when data was been collected. The inclusion criteria also involved those who were aged 18 years and above. It also included student nurses who were in their final year of the course and were willing to participate in the study.

Sampling Technique and Size

A sample size of 229 students was arrived at for the study using Yamane formular for sample size determination. A convenient sampling technique was then used to recruit participants for the study. Students were contacted in the classrooms, canteens or areas of groupings and the google form for the self-administration of the questionnaires shared to those who were qualified based on the inclusion and exclusion criteria. This approach was considered necessary because the period of data collection coincided with period students were preparing for their exams and were not attending classes frequently.

Data Collection Instrument

The Depression, Anxiety, and Stress Scale (DASS 21) was the tool used for this study. This was consistent with the study's goal. Students' stress levels were assessed in the second section of the questionnaire, their demographic characteristics were measured in the first, and their anxiety levels were examined in the third component of the study. The study's last section determined the student' depression scores.

Data Collection Procedure

The researchers after obtaining ethical approval to conduct the study met with the Head of Department of Nursing where the purpose of the study was explained and permission sought. Individual students who were qualified to participate were contacted and those who agreed to participate after the purpose of the study was explained were given the goggle form to consent and participation. A self-administered questionnaire was administered to the respondents in a google form format for those who were available and willing to participate in the study. Enough time was allocated for the questionnaire to be answered by the respondents.

Validity and Reliability

Measures were employed in this study in order to ensure that the right variables were used for the study and that the same results could be obtained consistently anytime the research was repeated. Reliability was ensured in this study by allowing respondents answer the questionnaires independently in order to minimize biases. Validity was also ensured in this study

by ensuring questions on the questionnaire was related to the topic and objectives of the study. Steps were taken to ensure accuracy of the measuring instruments. A standardized data collection instrument (DASS 21) was also used.

Data Analysis

The questionnaires administered from the google form were then moved to excel and later to SPSS for analysis. Data in the Statistical Package for Social Sciences software (SPSS) version 25 was analyzed. Results from the processed data was interpreted, summarized and displayed using descriptive statistics tools such as frequency tables and charts. These tools presented the result in a meaningful manner by expressing it in percentage and numerical values.

Results

Demographic Features

Table 4.1 is a frequency distribution table showing results on the demographic features of respondents of the study. Overall, 229 students participated in the study. The results revealed that majority of the respondents (61%) were between the ages of 18-25 years. Of the streams of students, majority, 138 (60.3%) were generic and had not practiced before while the rest were those holding Certificate (55 (24.0%)) and Diploma (36 (15.7%)) doing top-up for the degree program. It also showed that 226 respondents, or 98% of them, were primarily in levels 400 and 3. (1.3 percent). Additionally, the survey revealed that 61 (26.6%) of the respondents were Muslims and 168 (73.4%) were Christians, representing the bulk of the sample.

Table 4.1: Demographic Features

Demographic Features	Variables	Frequency (n)	Percent (%)
Gender	Female	117	51.1
	Male	112	48.9
Age	18-25	140	61.1
	26-30	61	26.6
	31-35	25	10.9
	36 & >	3	1.4
Stream	Generic	138	60.3
	Mature	55	24
	Top-up	36	15.7
Religion	Christianity	168	73.4
	Islam	61	26.6
	Total	**229**	**100**

Level of stress among students

Table 4.2 is a descriptive table showing results on level of stress among final year students of the University for Development Studies. The results revealed that majority 38% did not find it hard to slow down at all as compared to few of them 28.4% who sometimes found it hard to slow down. It also showed that 33.2% of the students in final year over-reacted to situations while 27.1% at good part of the time overreacted to situation. More than half of the students felt they sometimes use nervous energy with 24% of them not feeling it at all. Based on the data 73% of the students reported that they were always feeling agitated with 33.2% experiencing it most of the time. It further revealed that 32.8% of the respondents found it difficult to relax sometimes with only 14.8% of them experiencing it most of the time. Similarly, a good number of the students 33.2% were some of the times intolerant with things while only 27.5% experienced it a good part of the time. Lastly 31.9% of the students did not feel they were rather touchy at all with 20.5% at good part of the time having a feeling of being touchy.

Figure 1 is a pie chart showing further analysis on the various category of stress among students who participated in the study. The results show that while most of the students 29% had normal level of stress, quite a significant percentage of the students (23%) experienced extremely severe levels of stress. Also, 24% of the students experienced moderate stress while 13% and 11% respectively experienced mild and severe stress levels

Level of Anxiety Among Students

Table 4.3 is descriptive table showing results on levels of anxiety among final years students of the University for Development Studies. The result showed that most of the students 43.2% were not aware of the dryness of their mouth at all while only 12.2% of them experienced it most of the time. Similarly, majority of the respondents 49.3% did not experience breathing difficulty at all with just a few of them 15.7% experiencing it good part of the time. The results further revealed that among all the anxiety variable faced by final year students in the school, experiencing trembling

Table 4.2: Level of Stress Among Students

Variables	Not at all	Some of the time	Good part of the time	Most of the time
Finding it hard to slow down	87 (38%)	65 (28.4%)	39 (17%)	38 (16.6%)
Over-reaction to situations	63(27.5%)	76(33.2%)	62(27.1%)	28(12.2%)
Feelings of use of Nervous energy	55(24%)	89(38.9)	52(22.7%)	33(14.4%)
Always getting agitated	63(27.5%)	76(33.2%)	63(27.5%)	27(11.8%)
Finding it difficult to relax	60(26.2%)	75(32.8%)	60(26.2%)	34(14.8%)
Intolerance with things	65(28.4%)	76(33.2%)	63(27.5%)	25(10.9%)
Feelings of being touchy	73(31.9%)	73(31.9%)	47(20.5%)	36(15.7%)

Source of Data: Field Work

Figure 1: Category of Stress

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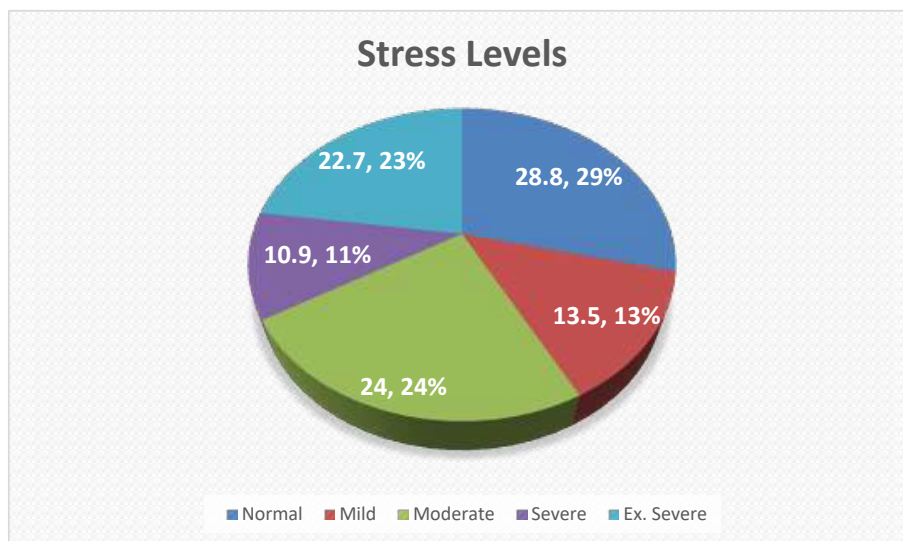
(30.1%), being worried about panic situations (34.9%), feelings of being close to panic (34.9%), and being aware of the action of the heart in the absence of physical exertion (29.3%) were experienced most of the time by the students. Feeling scared without any good reason was the dominant variable with 34% of the students affirming that they felt it a lot of the times as against those who stated they had its good part of the time.

Figure 2 shows a pie chart with additional analysis of the various categories of anxiety experienced by research participants. The findings indicate that whereas 38% of students reported having a normal level of anxiety, 19% of students reported having extremely severe levels of anxiety. 23% of them reported moderate anxiety, while 12% and 9% of them reported mild and severe anxiety, respectively.

Level of Depression among Students

Table 4.4 is a descriptive table showing results on level of depression among students. Based on the data, approximately 60% of the students reported experiencing feelings of worthlessness with 32.8% experiencing it some of the time and 12.2% feeling it most of the time. The results also revealed that the most common symptom reported was feeling downhearted and blue with 29.3% of the students experiencing it some of the time, 21% experiencing it a good part of the time and 12.2% experiencing it most of the time. Another common symptom reported by the students was the inability to become enthusiastic, 31.9% of the students experienced this symptom some of the time and 16.2% most of the time. Likewise, 13.5% of the students had the feeling most of the time that life was meaningless with 26.2% feeling it some of the time. The results further showed that majority of the student 42.4% did not have the feeling of having nothing to look up to at all and 12.7% experiencing it most of the time. Most of the students 38.0% found it difficult to work up the initiative some of the time with few 10.9% experiencing it most of the time.

The pie chart in Figure 3 provides additional analysis on the various types of depression among the study's participant. According to the findings, although 39% of students reported

Table 4.3: Level of Anxiety Among Students

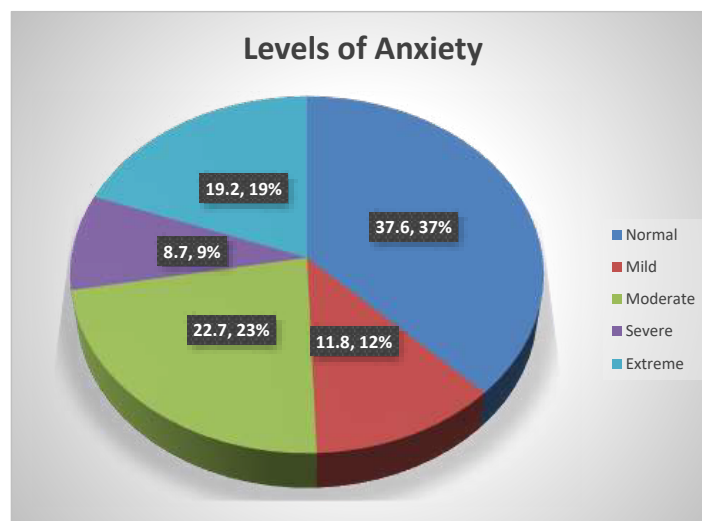| Variables	Not at all	Some of the time	Good part of the time	Most of the time
Awareness of dryness of the mouth	99 (43.2%)	67 (29.3%)	35(15.3%)	28 (12.2%)
Experiencing breathing difficulty	113(49.3%)	59 (25.8%)	36 (15.7%)	21 (9.2%)
Experiencing trembling	90 (39.3%)	69 (30.1%)	38 (16.6%)	32(14.0%)
Being worried about panic situations	68 (29.7%)	80 (34.9%)	49 (21.4%)	32 (14.0%)
Feelings of being close to panic	76 (32.2%)	80 (34.9%)	41 (17.9%)	32 (14.0%)
Awareness of heart action with no exertion	85 (37.1%)	67 (29.3%)	45 (19.7%)	32 (14.0%)
Feeling scared without any good reason	79 (34.5%)	68 (29.7%)	48 (21.0%)	34 (14.8%)

Source of Data: Field Work

Figure 2: Category of Anxiety

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Table 4.4: **Level of Depression among Students**

| Variables	Not at all	Some of the time	Good part of the time	Most of the time
Not experiencing any positive feelings	94(41.0%)	69(30.1%)	41(17.9%)	25(10.9%)
Difficult to work up the initiative	73(31.9%)	40(17.5%)	44(19.2%)	25(10.9%)
Feeling of having nothing to look up to	97(42.4%)	63(27.5%)	00 (0.00%)	29(12.7%)
Feeling downhearted and blue	85(37.1%)	67(29.3%)	48(21.0%)	28(12.2%)
Unable to become enthusiastic	89(38.9%)	73(31.9%)	30(13.1%)	37(16.2%)
The feeling of unworthiness	83(36.2%)	75(32.8%)	43(18.8%)	28(12.2%)
Feeling that life was meaningless	92(40.2%)	60(26.2%)	46(20.1%)	31(13.5%)
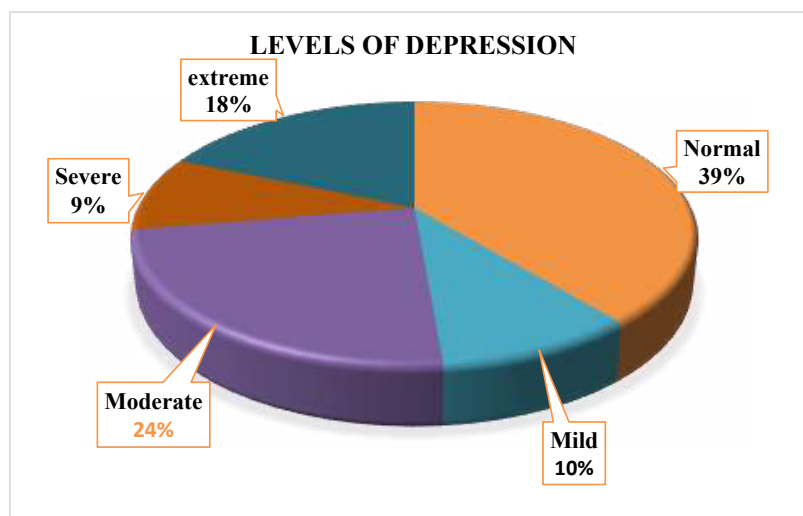
Figure 3: Category of depression

experiencing a normal level of depression, 18% of students reported experiencing extremely severe levels of depression. Furthermore, 10% and 9%, respectively, of the students reported mild and severe depression levels, while 24% of the students reported moderate depression.

Discussion

According to research on student stress levels, a sizable portion of the population 23% experienced extremely severe levels of stress. These results are in line with those of a related cross-sectional study that looked at the prevalence and risk factors of stress, anxiety, and depression among Syrian medical students. Of the 350 students that took part in the study, stress was more common (24). It also supports results from a study done in Turkey, where a cross-sectional survey with a sample size of 358 students from 14 different universities found that most of the students felt stressed out. The purpose of the study was to find out how common it was for students to feel stressed during the epidemic and to look into factors that might have an impact on stress levels (71 percent) were female students who did not engage in physical

activity displayed increased stress levels (25). The results are in line with a related descriptive study conducted (26), which examined the perceived levels of academic stress among 427 students from a public university in Nigeria. According to the survey, male students reported more academic stress than female students, with students overall expressing higher levels of stress (mean score of 50.3612).

A significant portion of students, 19 percent, reported having extreme anxiety, according to the study's findings on anxiety among students. This information supports a descriptive cross-sectional study with a sample size of 267 undergraduate physiotherapy students that was carried out in various physiotherapy institutes in Sindh, Pakistan, to determine the prevalence of depression, anxiety, and stress (DAS) among these students. The study found that anxiety was more common among these students (68.54 percent) (22). The findings were corroborated by the outcomes of a related cross-sectional study conducted at Jazan University of Saudi Arabia with a sample of 642 students (27). The prevalence of stress, anxiety, and depression was evaluated, along with how they related to other risk variables and khat chewing. It was

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discovered that 65.7% of students reported having anxiety, and that there was a clear correlation between female gender and a higher mean score for anxiety symptoms.

The findings, however, conflict with those of (28), who found that in their research of 1582 undergraduate students at a Jordanian institution, anxiety levels were low. The purpose of the study was to ascertain the prevalence of depression and anxiety, as well as the factors that are linked to these conditions, and to assess the use and understanding of antidepressant drugs. The fact that Jordan is a developed country with access to the resources children need to finish particular chores could be the reason for the low level of concern, as opposed to Ghana. Studies on depression among students revealed that 18% of them suffered from serious depression. This result is consistent with a related study by (29) among medical students in Ethiopia, which used a sample size of 273 to determine the prevalence and contributing factors of anxiety and depression and discovered that the majority of the students had depression. The outcomes also align with the results of a cross-sectional study that looked at the prevalence of depression among nursing students worldwide and UDS and how demographic and educational factors affected depression rates. The study included 8918 nursing students who reported having a high level of depression (30,32). The high percentage of depression that was found may have resulted from the demands that most university curricula place on senior students, who must accomplish multiple activities at once.

However, different results were obtained from a cross-sectional study that compared the prevalence of depression among university students in Macau, Hong Kong, and mainland China. The study also looked at the relationship between depression and quality of life, using a sample size of 2,312 students, and found that depression was low (31).

The variance in depression levels may be due to final-year students' high levels of stress from the pressure to perform well in their classes as they get closer to graduation which correlates with the finding of (33). Depression can result from the pressure to achieve, and as graduation draws near, students may have emotions of worry about their employment prospects.

Summary of the study

This study ascertained the level of stress, depression and anxiety among students. Self-administered questionnaire was used to gather data using cluster sampling and convenient simple random sampling technique. A total of 229 student participants were used for the study. The results show that most of the students 29% had normal level of stress, 23% experienced extremely severe levels of stress 24% of the students experienced moderate stress while 13% and 11% respectively experienced mild and severe stress levels. It further showed that 38% of the participants had normal anxiety level. While quite a significant percentage of the students 19% experienced extremely severe levels of anxiety, 23% experienced moderate stress ,12% and 9% respectively experienced mild and severe anxiety levels. The study also indicates that majority 39% had normal level of depression with a good percentage of the students 18% experiencing extremely severe levels of depression. In addition, 24% experienced moderate depression while 10% and 9% experienced mild and severe depression respectively.

Strengths

This study has highlighted the psychological traumas students in tertiary school's face. The findings create opportunity for policy makers and school's authorities to put advance measures that would help reduce the level of stress, anxiety and depression tertiary students often face. The description of the level of stress, anxiety and depression also clearly show common triggers to some of these psychological challenges so measures can be adopted to address them.

Limitation of the Study

This study was conducted among final year undergraduate nursing students in low-income setting where income levels of parents are low and amenities for students on campus are also limited. Convenient sampling approach was also used to recruit respondents because of difficulty meeting larger number of the students together. A simple data analytic approach was used which did not involve much of inferential analysis and these served as limitation to the study. The study did not also receive funding which could have helped in expanding it to a larger study.

Implication of the Study

Maintaining proper level of stress, anxiety and depression among students is an important aspect of maintaining school health. Outcomes of the study provides authorities of tertiary institutions the opportunity to have fair knowledge of the mental health situations of students and this will help them design and implement measures to improve the psychological wellbeing of students.

Conclusion

The study's conclusion acknowledges that a significant portion of final-year students experience psychological difficulties to some extent. These difficulties may be linked to their heavy academic workloads, which include several assignments, group projects, final exams, and project work. It might also be because of their anticipated cumulative grade point average (CGPA) and their fear of what lies ahead in life after school.

Recommendations

Based on the findings of this study, the following recommendations are made to improve on mental wellbeing of students

- Lecturers should provide warm and calm support to final year students when they are distressed or anxious and acknowledge how they are feeling.

- Final year students should perform relaxation techniques such as deep breathing, meditation, visualizing a positive outcome and then relaxing their muscles one at a time can all promote relaxation.

- Government institutions like universities should offer mental health counseling and resources. Educational institutions can provide access to mental health professionals and resources to help students cope with their stress levels and improve their mental health.

- Government institutions can offer tutoring services to support students to keep up with their work, and universities can implement study sessions to help mentor their study habits.

- Government institutions like universities can help students identify their time management strategies to prioritize the most essentials task and avoid feeling overwhelmed.

- Government institutions like universities can promote policies that accommodates students living with mental health challenges. With these policies in places, students can have relief from academic stresses such as the extension of deadlines, academic workplace.

- Universities should build the capacity of their counselling units to perform to the maximum for the students wellbeing and better academic outcomes.

Declarations

Ethics and Consent to Participate

Ethical approval was obtained from the Ethical Review Board of the University for Development Studies (ethicsboard@uds.edu.gh) prior to data collection.

Informed Consent

Informed consent was obtained from participants after they were briefed on the purpose, benefits and risks of the study. They were also informed of the fact that there were no monetary benefits in participating in the study. Again, participation was on voluntary basis, hence, participants were told they could withdraw from the study anytime they feel so. Participants were made to sign a consent form indicating their willingness to participate in the study.

Consent for Publication

'Not Applicable'

Availability of Data and Material

Data for this study is available and has been uploaded as part of the supplementary documents

Competing Interest

There is no competing interest in this research work

Funding

Author's Contribution

The conceptualization and design for this study was done by A.N.P. Data analysis was done by A.O.J, while A.M.C did the formatting, proof reading and arrangements of the work. L.K.C wrote the main manuscript text and the funding. Proof reading and technical inputs of this research work was done by A. M.P. and R. E. H. All the authors reviewed and approved the manuscript for submission.

Acknowledgement

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