


**Research Article**

## Depression, Anxiety and Stress among Basic School Students in Northern Region of Ghana

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### Abstract

**Introduction:** Depression, anxiety, and stress are prevalent among basic school students in Northern Ghana, with the potential to affect learning outcomes/academic performance and well-being. Socioeconomic gaps, cultural stigmas, and limited mental health resources exacerbate the problem. Identifying regional risk factors is vital for crafting targeted interventions.

This research is to shed light on the critical issue of depression, anxiety, and stress among basic school students leading to a meaningful change in policies and practices. By fostering a mentally healthy and supportive environment, we can empower students to thrive academically, emotionally, and socially, ensuring a brighter future for them and the society they will shape.

**Objectives:** This study aims to delve deeply into the prevalence, of depression, anxiety, and stress among basic school students. By gaining a thorough understanding, we strive to inform the creation and execution of impactful support systems and policies to alleviate mental health burdens among young learners.

**Methodology:** Between February 2023 and April 2023, a cross-sectional study was carried out among basic school students in the Northern region of Ghana. The study utilized the short form of the Depression Anxiety Stress Scale (DASS-21) alongside sociodemographic characteristics. The DASS-21 is a 21-item questionnaire comprising three self-reporting scales aimed at assessing depression, anxiety, and stress symptoms.

**Results:** The prevalence of depression among the students was 64.5% (258), categorized as follows: 33.8% (135) experienced mild depression, 10.7% (43) had moderate depression, 12.0% (48) experienced severe depression, and 8% (32) had extremely severe depression. In terms of anxiety, the total prevalence was 74.6% (298), with 35.5% (142) experiencing mild anxiety, 14.8% (59) moderate anxiety, 15.2% (61) severe anxiety, and 9.0% (36) extremely severe anxiety. The overall stress level among the students was 76.2% (305), with 30.4% (121) experiencing mild stress, 19.4% (78) moderate stress, 14.8% (59) severe stress, and 11.6% (47) extremely severe stress. The prevalences of depression, anxiety, and stress were high with these significantly higher among females, whereas prevalences of depression were higher for Basic 6 and Junior High School (JHS) 3 students, anxiety higher among JHS 1 and Basic 6 students and stress was significantly higher among JHS 3 and Basic 6 students.

**Conclusion:** Depression, anxiety, and stress were very common, especially among girls. Depression was more common among Basic 6 and JHS 3

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students, anxiety was higher among JHS 1 and Basic 6 students, and stress was particularly high among JHS 3 and Basic 6 students.

Addressing mental health challenges like depression, anxiety, and stress among basic school students in Northern Ghana demands concerted and a collaborative effort from schools, parents, policymakers, and society at large. Recognizing regional dynamics and implementing tailored interventions, we can mitigate the impact of depression, anxiety, and stress. Sustainable solutions are crucial for fostering improved mental well-being and academic success in this population.

Further studies are recommended to determine the factors leading to these mental health disorders among these upcoming generation.

**Keywords:** Depression; Anxiety; Stress; DASS-21; Basic school students.

## Introduction

Nestled within the captivating landscapes of Ghana lies the Northern Region, a gem waiting to be discovered. With its diverse cultures, stunning natural scenery, and resilient communities, this region pulsates with life and opportunity (12).

According to (13) the bustling markets of Tamale to the serene experience of cultural artifacts, the Northern Region boasts a unique blend of urban vibrancy and rural tranquility. Here, ancient traditions intertwine seamlessly with modern aspirations, creating a dynamic tapestry of heritage and progress (14).

But amidst the bustling activity, lies a tale of resilience and determination. The people of the Northern Region are known for their warmth, hospitality, and unwavering spirit. Despite facing socio-economic challenges, they stand united, forging ahead with optimism and grace (13, 15).

In today's fast-paced and demanding world, the mental health of young students has become a growing concern. The prevalence of mental health issues such as depression, anxiety, and stress among basic school students has risen significantly over the years (1). As educators, parents, and caregivers, it is crucial to address these challenges to ensure the well-being and academic success of the younger generation (2).

The prevalence of depression, anxiety, and stress among basic school students in the Northern Region of Ghana is a pressing concern. Despite efforts to improve mental health awareness, these conditions persist, impacting academic

performance and overall well-being. Factors such as socioeconomic disparities, cultural stigmas, low level of mental literacy and limited access to mental health resources among others contribute to the challenge. Understanding the specific dynamics and risk factors within this region is crucial for developing targeted interventions and support systems to address the mental health needs of basic school students effectively.

Depression, anxiety, and stress are complex emotional and psychological conditions that can significantly impact a child's ability to learn, socialize, and develop healthy coping mechanisms. Early identification and intervention are essential to providing appropriate support and fostering a positive learning environment.

This research aims to delve into and explore these issues and propose sustainable solutions for improved mental health outcomes. Knowing the factors contributing to depression, anxiety, and stress among basic school students., we can identify potential triggers and risk factors, thereby enabling the implementation of targeted prevention and intervention strategies.

## Methodology

**Research design:** The study employed a quantitative cross-sectional approach to collect extensive data on depression, anxiety, and stress among basic school students.

**Sampling:** The target population comprised basic school students in the Northern Region of Ghana. To ensure representation from diverse schools, grades/levels, and socio-demographic backgrounds, a stratified random sampling method was employed.

**Data collection:** A validated questionnaire, such as the Depression Anxiety Stress Scales (DASS), was administered to evaluate the prevalence and severity of depression, anxiety, and stress among students. Each scale comprised 7 items. Respondents utilized 4-point severity/frequency scales to assess their experiences of each state over the past week. The DASS-21 allowed for categorization into various levels (normal, mild, moderate, severe, and extremely severe) based on scores, from which the prevalence of these challenges was determined, particularly focusing on the categories of moderate, severe, and extremely severe.

**Ethical considerations:** Prior to data collection, ethical approval was obtained from the appropriate institutional review boards.

**Data analysis:** Statistical analysis, encompassing descriptive statistics and inferential tests, was performed to investigate the prevalence, patterns, and correlations of depression, anxiety, and stress with demographic variables.

## Results

**Table 1:** Prevalence of depressive, anxiety and stress symptoms.

	<b>Depression [n (%)]</b>	<b>Anxiety [n (%)]</b>	<b>Stress [n (%)]</b>
Normal	35.5% (142)	25.5% (102)	23.8% (95)
Mild	33.8% (135)	35.5% (142)	30.4% (121)
Moderate	10.7% (43)	14.8% (59)	19.4% (78)
Severe	12.0% (48)	15.2 (61)	14.8% (59)
Extremely severe	8% (32)	9.0% (36)	11.6% (47)
Total	400 (100%)	400 (100%)	400 (100%)

**Table 2:** Depression, anxiety, stress and sociodemographic characteristics association.

<b>Sociodemographic characteristics</b>	<b>Depression [n (%)]</b>	<b>Anxiety [n (%)]</b>	<b>Stress [n (%)]</b>
9-10years	(25.5%)	(18.7%)	(22.1%)
11-12 years	(36%)	(26.9%)	(29.3%)
13-14 years	(38.5%)	(54.4%)	(48.6%)
<b>Sex</b>			
	<b>Male</b>	<b>Female</b>	
	200 (50%)	200 (50%)	
Male	38.3%	<b>43.3%</b>	52.4%
Female	61.7%	56.7%	47.6%
p value	0.02	0,04	0.01
<b>Level of education</b>			
Basic 4	16%	14. %	7%
Basic 5	10%	17%	11%
Basic 6	23%	18.7%	19.0%
JHS 1	13.4%	23.3%	16%
JHS 2	17.5%	<b>13.0%</b>	15.3%
JHS 3	20.1%	<b>14.0%</b>	31.7%
p-value	0.01	0.04	0.03
<b>Religion</b>			
Christian	27.0%		
Muslim	62.0%		
Traditionalist	0.1%		
<b>No affiliation</b>	<b>10.9</b>		
<b>Depression, Anxiety and Stress as determined by religious affiliation</b>			
Christian	<b>46.2%</b>	36.3%	38.5%
Muslim	52.3%	61%	43.2%
Traditionalist	1.5%	2.7%	18.3%
p-value	0.13	0.15	0.10

The study revealed that among the students, 35.5% (142) showed no signs of depression, while 64.5% (258) experienced depression. 33.8% (135) had mild depression, 10.7% (43) had moderate depression, 12.0% (48) had severe depression, and 8% (32) experienced extremely severe depression.

In terms of anxiety prevalence, 74.6% (298) of the students were identified as having anxiety. This included 35.5% (142) with mild anxiety, 14.8% (59) with moderate anxiety, 15.2% (61) with severe anxiety, and 9.0% (36) with extremely severe anxiety. Notably, 25.5% (102) showed no signs of anxiety.

Regarding stress levels, 23.8% (95) of students were found to have no stress. However, the overall stress prevalence was 76.2% (305), with 30.4% (121), 19.4% (78), 14.8% (59), and 11.6% (47) experiencing mild, moderate, severe, and extremely severe stress levels respectively.

## Discussion

In this study, the prevalence rates for depression, anxiety, and stress among students were found to be 64.5%, 74.6%, and 76.2% respectively. A study by Nketia et al. [1] conducted among senior high students in the East Gonja district of the savannah region of Ghana identified a depression prevalence of 57.9%. Although this rate is slightly lower than the depression prevalence in our study, both rates remain high, likely due to the similar socioeconomic contexts in the northern regions of Ghana where both studies were conducted.

Another study in Accra [2] recorded a depression prevalence of 39.2% among university students, while [3] reported 57% of university students experiencing mild to extremely severe depression, with 84% experiencing mild to extremely severe anxiety, and 49% experiencing mild to extremely severe stress. Additionally, in the general adult population of various regions in Ghana [4], prevalence rates of 9.7%, 25.2%, and 53.3% were reported for stress, depression, and anxiety respectively.

These previous studies present comparatively lower prevalence rates for depression, anxiety, and stress than the rates found in our current study. This variation could be attributed to differences in sample populations, with some studies recruiting participants from the general population or university students, who may face different conditions influencing their experiences of depression, anxiety, and stress compared to the primary and junior high school students in our study.

Furthermore, a study in Northwest Ethiopia [5] reported depression prevalence of 41.4%, anxiety of 66.7%, and stress of 52.2% among high school students, aligning closely with the findings of this current study. In Benin state, Nigeria, [6] recorded a depression prevalence of 32.0% among medical students.

In Mexico, studies [7] found mean scores ( $8.34 \pm 6.33$ ,  $7.75 \pm 5.89$ ,  $10.26 \pm 5.84$ ) for depression, anxiety, and stress respectively among senior high school students. Meanwhile, [8] reported mean scores of  $6.15 \pm 5.6$ ,  $5.8 \pm 5.2$ , and  $8.08 \pm 5.3$  for depression, anxiety, and stress respectively among junior high school students during the COVID-19 pandemic.

A study in Jeddah city, Saudi Arabia [9], found 42.9%, 46.6%, and 19% of students experiencing depression, anxiety, and stress respectively. These findings, along with our current study, underline the prevalence of depression, anxiety, and stress among students across different periods and locations.

In India, [10] reported prevalence rates of 65.5%, 80.9%, and 47.0% for depression, anxiety, and stress respectively among school-going adolescents. Similarly, in New Delhi [11], prevalence rates of depression, stress, and anxiety were found to be 47.9%, 51.8%, and 65.3% respectively among school-going adolescents. These congruent prevalence rates across studies conducted in India further emphasize the significant presence of depression, anxiety, and stress among adolescents, similar to our findings in this study.

## Conclusion

The prevalence of depression, anxiety, and stress among basic school students in the Northern Region of Ghana underscores the urgent need for action. Socioeconomic disparities, cultural stigmas, and limited access to mental health resources exacerbate these challenges, significantly impacting academic performance and overall well-being.

In addressing the challenges of depression, anxiety, and stress among basic school students requires a collaborative effort from schools, parents, policymakers, and society at large. By fostering a holistic and supportive environment, we can equip students with the emotional tools they need to navigate life's challenges successfully, paving the way for a brighter and more prosperous future for our young learners.

## Recommendations

**Enhance Mental Health Education:** Implement comprehensive mental health education programs in schools to increase awareness and reduce stigma surrounding mental health issues.

**Increase Access to Mental Health Services:** Invest in the expansion of mental health services, including counseling and therapy, within schools and local communities to provide timely support for students in need.

**Address Socioeconomic Disparities:** Implement policies aimed at reducing socioeconomic disparities to alleviate stressors related to financial insecurity and improve overall well-being.

**Strengthen Community Support Systems:** Foster

partnerships between schools, families, healthcare providers, and community organizations to create holistic support systems for students experiencing mental health challenges.

**Train Educators and Healthcare Providers:** Provide training for educators and healthcare providers on identifying signs of depression, anxiety, and stress in students and facilitating appropriate interventions.

Implementing these recommendations, schools and stakeholders can work towards creating a supportive environment that promotes the mental well-being of basic school students in the Northern Region of Ghana.

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## Conflicts of interest

There are no conflicts of interest.

## References

1. Nketia R, Shaibu U, Luri PT. Levels of Perceived Need for Mental Health Care Among High School Students with Depression: A Study in the East Gonja Municipality, Ghana. *International Journal of Multidisciplinary Studies and Innovative Research* 10 (2022): 1602-1610.
2. Asante KO, Andoh-Arthur J. Prevalence and determinants of depressive symptoms among university students in Ghana. *Journal of affective disorders* 171 (2015): 161-166.
3. Kugbey N, Osei-Boadi S, Atefoe EA. The Influence of Social Support on the Levels of Depression, Anxiety and Stress among Students in Ghana. *Journal of Education and Practice* 6 (2015): 135-140.
4. Amu H, Osei E, Kofie P, et al. Prevalence and predictors of depression, anxiety, and stress among adults in Ghana: a community-based cross-sectional study. *Plos One* 16 (2021): e0258105.
5. Nakie G, Segon T, Melkam M, et al. Prevalence and Associated Factors of Depression, Anxiety, and Stress Among High School Students in, Northwest Ethiopia, 2021. *BMC Psychiatry* 22 (2022): 1-12.
6. Isara AR, Nwokoye OI, Odaman AO. Prevalence and risk factors of depression among undergraduate medical students in a Nigerian university. *Ghana Medical Journal* 56 (2022): 303-310.
7. Cervantes-Cardona GA, Cervantes-Guevara G, Cervantes-Pérez E, et al. Prevalence of depression, anxiety, and stress among high school students during the COVID-19 pandemic: a survey study in Western Mexico. *International Journal of Environmental Research and Public Health* 19 (2022): 16154.
8. Maciel-Saldierna M, Elizondo-Hernández E, Cervantes-Guevara G, et al. Prevalence of Depression, Anxiety, and Stress in Junior High School Students in Guadalajara, Mexico: A Cross-Sectional Survey Study. *International Journal of Environmental Research and Public Health* 19 (2022): 15463.
9. Al-Shehri MM, Harazi NM, Elmagd MHA. Prevalence of Depression, Anxiety and Stress among Secondary School Students in Jeddah City, Saudi Arabia. *Journal of Psychiatry* 23 (2022): 1-12.
10. Sandal RK, Goel NK, Sharma MK, et al. Prevalence of Depression, Anxiety and Stress among School Going Adolescent in Chandigarh. *Journal of Family Medicine and Primary Care* 6 (2017): 405.
11. Kumar A, Yadav G, Chauhan N, et al. Prevalence of Depression, Anxiety and Stress Among School Going Adolescents in Delhi: A Cross Sectional Study. *International Journal of Community Medicine and Public Health (Gujarat)* 6 (2019): 5021-5026.
12. Abdul-Razak, M., & Kruse, S. (2017). The adaptive capacity of smallholder farmers to climate change in the Northern Region of Ghana. *Climate Risk Management*, 17, 104-122.
13. Asante, A. D., Zwi, A. B., & Ho, M. T. (2006). Equity in resource allocation for health: A comparative study of the Ashanti and Northern Regions of Ghana. *Health Policy*, 78(2-3), 135-148.
14. Aganiba, B. A., Owusu, W. B., Steiner-Asiedu, M., & Dittoh, S. (2015). Association between lifestyle and health variables with nutritional status of the elderly in the northern region of Ghana. *African Journal of Food, Agriculture, Nutrition and Development*, 15(4), 10198-10216.
15. Xu, Y., Abena, A. A. N., & Bakpa, E. K. (2019). Poverty and health issues in the northern part of Ghana. *J. Res. Humanit. Soc. Sci*, 9(8), 14-21.