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Psychological factors affecting wellbeing of students living with sickle cell anemia in senior secondary school in Enugu State

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Abstract

The study investigated psychological factors affecting wellbeing of secondary school students living with sickle cell anemia in Enugu State. Ex-post facto design was adopted for the study. It was guided by two research questions. The population for the study consisted of 50 senior secondary school students living with sickle cell anemia in public schools Enugu State selected through purposive sampling technique. Due to the specificity of the health condition under investigation, all the respondents was used. The instrument for data collection was a researcher-designed questionnaire titled Psychological factors affecting wellbeing of students living with sickle cell Questionnaire (PWSCQ). The instrument was validated by three experts; two from Educational Psychology, and one from Measurement and Evaluation from Enugu State University of Science and Technology (ESUT). The reliability of the instrument yielded a Cronbach alpha coefficient of 0.87. Mean and standard deviation was used to answer research questions. Major findings of the study indicated that stress influences health condition of students living with sickle cell anemia. Similarly, there is need for social support for better adjustments of the students. It was recommended, among other things, that schools should provide psycho-social support systems including trained counselors, while public health interventions should improve access to healthcare. Similarly, government should provide better inclusive learning environments for students living with sickle cell anemia.

Keywords: psychological, well-being, sickle cell anemia, secondary school students,

Introduction

Sickle cell anemia (SCA) is a hereditary blood disorder marked by the abnormal sickling of red blood cells, which often result in chronic pain episodes, anemia, fatigue, susceptibility to infections, and organ damage. SCA is characterized by the presence of abnormal hemoglobin) HbS), which causes red blood cells to assume sickle shape under low oxygen conditions (Adigwe et al., 2023). These abnormal cells obstruct blood flow, leading to recurrent pain episodes, fatigue, anemia, and organ damage. The disease constitutes a significant a significant public health challenge, particularly in sub-Saharan Africa, where the prevalence is among the highest globally (Isa, et. al, 2020). Nigeria accounts for a substantial proportion of the global SCA burden, with thousands of affected infants born annually (Adegboyega, 2021). The high prevalence of sickle cell anemia in Nigeria makes it not only a medical issue, but also a psychosocial and educational concern, particularly among students who must cope with the demands of schooling while managing a chronic illness. Despite advances in medical management, the chronic nature of SCA exposes the individual to ongoing physical and psychosocial stressors that extend well beyond clinical symptoms (Adewoye et al., 2017).

For students, the implication of living with SCA are particularly complex. Frequent pain crisis and hospitalization can disrupt academic attendance and participation, making it challenging to meet the demands of school work. In addition to physical disruption, living with a chronic disease during critical development periods such as adolescence and early childhood can profoundly influence psychological wellbeing, academic engagement, and social functioning (Sickle cell Disease Association of America, 2015). Emerging research suggests that youth with SCA frequently experience emotional distress, disrupted interpersonal relationships, and reduced quality of life compared to their healthy peers (Akinpelu, 2025). Importantly, students living with sickle cell disease in Nigeria report frequent academic disruption due to pain crises, which contribute to frustration, psychological strain, and social stigma within the university environment.

Psychosocial factors such as stress, self-esteem, coping strategies, and perceived social support are known to influence overall wellbeing among individual living with chronic illnesses. Stress related to recurring health complications and uncertainty about disease progression can elevate levels of anxiety and depressive symptoms, while low self-esteem may further exacerbate emotional difficulties (Adegboyega, 2021; Akinpelu, 2025). Persistent pain can expose students with sickle cell anemia to high levels of stress and emotional distress. Recurrent pain episodes and limitations in physical activities may lead to feelings of frustration, helplessness, and social isolation. These experiences can negatively impact self-esteem and increase vulnerability to anxiety and depressive symptoms, particularly during adolescence and early adulthood

which are critical periods for identity formation and emotional development. Social support from family, peers, and school communities has been identified as an important correlate of better psychosocial adjustments among students living with SCA with research showing significant relationships between perceived support and psychological adjustments outcomes (Olusoji, et, al., 2021).

In addition, stigma and misconceptions surrounding sickle cell anemia within schools and communities may further compound psychological difficulties. Students living with sickle cell anemia may be misunderstood, labeled as weak, lazy, or frequently absent, which can affect their self-image and peer relationships. Such negative social experiences may diminish perceived social support from classmates and teachers, thereby worsening emotional wellbeing (Bebe et al, 2020). Conversely, strong family support, understanding school environments, effective coping strategies, and access to psychological and counselling services have been shown to enhance resilience and improve wellbeing among students living with sickle cell anemia.

Within Nigerian context, psychological problems associated with SCA among students include emotional upset, behavioural challenges, and learning difficulties; factors that can intersect with academic performance and life satisfaction (Aregboyega, 2021). Cultural perceptions and societal attitudes toward SCA may also contribute to negative experiences of stigma and social misunderstanding, further influencing emotional wellbeing. In Enugu State, like many parts of Nigeria, students with sickle cell anemia face unique socio-economic and healthcare challenges. Limited access to specialized healthcare services, inadequate school-based health support, and low awareness of the psychological needs of students with chronic illness may exacerbate their psychological burden. While medical aspects of sickle cell anemia have received considerable attention in Nigeria, empirical studies focusing on the psychological factors affecting the wellbeing of students living with the condition, particular within Enugu State, remain limited. Most existing studies emphasize clinical management and survival, with insufficient focus on mental health, emotional adjustments, and social experience within educational settings (Ezenwa et al., 2020).

Given the growing recognition of the interrelationship between psychological health and overall wellbeing, there is a need for empirical research that examines the psychological factors influencing the wellbeing of students living with sickle cell anemia in Enugu. Understanding how stress, and social support challenges affect these students is essential for developing effective psychosocial interventions, school counselling programmes, and supportive educational policies. Such evidence-based insights can inform educators, healthcare providers, parents, and policy makers on how best to promote wholistic wellbeing and academic success among students living with sickle cell anemia. This is the gap this research filled.

Statement of the Problem

Sickle cell anemia is a chronic genetic disorder that imposes significant physical and psychological health burdens on affected individuals, particularly adolescents navigating the demands of secondary education particularly in Nigeria where the prevalence is among the highest globally. While considerable attention has been given to the medical management of sickle cell anemia, less emphasis has been on the psychological dimensions of the condition especially among students who must navigate both academic demands and chronic health challenges. For students living with sickle cell anemia, recurrent pain crisis, fatigue, frequent hospital visits, and prolonged absenteeism from school often interfere with learning , peer interaction, and overall school engagement. Beyond these physical challenges, students with sickle cell anemia are exposed to numerous psychological stressors that may adversely affect their wellbeing. These include chronic stress related to health uncertainty, anxiety about academic performance, low self-esteem arising from physical limitations, fear stigmatization, and feelings of social isolation. When inadequately addressed, such psychological factors can negatively influence emotional stability, motivation, academic persistence, and quality of life. In educational settings, poor psychological wellbeing among students may result in reduced academic achievement, poor social adjustment, and increased risk of mental health problems. In Enugu State, anecdotal evidence and limited studies suggest that students living with sickle cell anemia face inadequate psychological and institutional support within schools and tertiary institutions. School health services often priotizes physical health needs, with limited integration of psychological counselling or psychosocial support tailored to students with chronic illnesses. Furthermore, teachers and peers may lack adequate awareness of the psychological challenges associated with sickle cell anemia, which can contribute to misunderstanding, stigma, and insufficient support for affected students.

Despite the growing body of international literature on the psychosocial implications of sickle cell anemia, there remains a noticeable gap in empirical research focusing specifically on the psychological factors affecting the wellbeing of students living with sickle cell anemia in Enugu State. Existing Nigerian studies have largely concentrated on clinical outcomes, general quality of life, or adult populations, with limited attention to students within educational environments and the specific psychological variables that influence their wellbeing. The absence of context-specific empirical evidence on psychological factors such as stress, self-esteem, social support and emotional wellbeing among students living with sickle cell anemia in Enugu hinders the development of effective school-based interventions, counselling programmes, and supportive educational policies. Without such evidence, stakeholder may be ill-equipped to design targeted strategies that promote wholistic wellbeing and academic success for this vulnerable group. Therefore, there is a critical need for an investigation into the psychological factors affecting the wellbeing of students living with sickle cell anemia in Enugu State.

Research Questions

1. To what extent does stress influence the wellbeing of male and female secondary school students living with sickle cell anemia in Enugu State?
2. To what extent does social support influence the wellbeing of male and female secondary school students living with sickle cell anemia in Enugu State?

Method

In this study, ex-post facto design was adopted. Ex-post facto design was suitable for this study because it studies possible causes of an event by examining existing conditions after the event has already occurred. This study was conducted in all the public secondary schools in Enugu State. There are 289 public secondary schools in Enugu North Local Government Area of Enugu State (Enugu State PPSMB Statistics, 2024). The population of this study comprises all senior secondary school students (SS1 to SS3) diagnosed with sickle cell anemia in the State. Purposive sampling technique was used to select participants. This is because the study specifically targeted students diagnosed with sickle cell anemia who agreed to partake in the research. With assistance from school counsellors, a sample size of 50 students was selected based on availability and consent. A self-constructed questionnaire titled "Psychological factors affecting wellbeing students living with sickle cell questionnaire (PWSCQ) was used to collect information from students. The self-constructed questionnaire was aimed at examining psychological factors affecting wellbeing of students living with sickle cell anaemia in secondary school in Enugu State. The questionnaire was structured on a four-point Likert scale; very high extent (VGE) = 4, high extent (GE) = 3, low extent (LE) = 2, very low extent (VLE) =1. The instrument was face validated by three experts; two in Educational Psychology, and one from Measurement and Evaluation from Enugu State University of Science and Technology. The researcher established the reliability of the instrument through trial-testing of the instrument on a population similar to those used for the study. In doing this, the instrument was administered and data collected from ten (10) students with SCA in Ebonyi State. The data were collected and analysed using Cronbach Alpha. The results obtained was 0.89, 0.81 with overall co-efficient of 0.83. This indicated a high consistence and reliability of the instrument. The researchers engaged guidance counsellors in the school as research assistants. The questionnaire was collected on the spot.The statistical tools employed in the analysis of data was mean, standard deviation and t-test. Mean and standard deviation was used to answer all research questions. T-test was used to test null hypotheses at 0.05 level of significance. For research questions; 3.00-2.50= very high extent, 2.49-2.00= high extent, 1.99-1.50= low extent and 0.49-1.00= very low extent. The null hypothesis was not rejected and declared negative influence when t calculated is less than t critical at five percent level of significance otherwise it was rejected and seen as positive influence.

Data Presentation and Results

Table 1: Mean scores and standard deviation of stress influence on wellbeing of male and female secondary school students living with sickle cell anemia in Enugu State.

	ITEMS	Male Students 29		Female Students 21		Overall 50		
S/N	**Question/Item**	$\overline{X}$	**SD**	$\overline{X}$	**SD**	$\overline{X}$	**SD**	**Dec**
1.	I experience sudden pain crises while in school.	1.99	.82	2.01	.80	2.00	.81	HE
2.	I feel afraid that I might fall sick during school hours.	2.00	.83	1.97	.81	1.99	.82	LE
3	I feel sad because of my health condition.	2.02	.79	2.05	.82	2.03	.80	HE
4	I feel frustrated when I cannot participate in school activities due to pain.	2.01	.83	1.92	.80	1.98	.83	LE
5	I cry or feel like crying because of the pain I go through.	2.01	.82	2.00	.80	2.01	.81	HE
6	I feel tired or weak even after resting.	2.00	.83	1.91	.83	1.98	.83	LE
7	I worry that other students may not understand what I'm going through.	2.04	.83	1.99	.83	2.03	.83	HE
8	I miss classes or school events because of my health condition.	2.04	.83	1.97	.83	2.02	.83	HE
	Cluster Mean/SD	**2.02**	**.82**	**1.98**	**.81**	**2.01**	**.82**	**HE**

The table presents the mean scores and standard deviations of male and female students on items assessing stress influence on sickle cell anemia. The overall cluster mean score was 2.01 with a standard deviation of 0.82, indicating that the students generally agreed that stress influences sickle cell anemia on a high extent.

Table 2: Mean scores and standard deviation of social support influence on secondary school students living with sickle cell anemia in Enugu State.

	ITEMS	Male Students 29		Female Students 21		Overall 50		
S/N	**Question/Item**	$\overline{X}$	**SD**	$\overline{X}$	**SD**	$\overline{X}$	**SD**	**Dec**
9	I feel accepted by my classmates despite my health condition.	2.41	.84	2.40	.82	2.41	.83	HE
10	Some students make fun of me because I have sickle cell anemia.	2.31	.82	2.38	.83	2.35	.83	HE
11	I participate in school activities like sports and excursions.	1.53	.81	1.54	.84	1.54	.83	LE
12	I avoid school events because I fear getting tired or falling ill.	1.47	.81	1.48	.87	1.48	.84	LE
13	I feel isolated or lonely in school because of my health condition.	1.49	.82	1.41	.84	1.50	.83	LE
14	My teachers treat me the same way they treat other students.	1.53	.81	1.54	.84	1.54	.83	LE
15	I have close friends in school who understand my condition.	2.36	.83	2.34	.85	2.35	.84	HE
16	I hide my health condition from my classmates to avoid discrimination.	2.33	.80	2.37	.86	2.35	.83	HE
	Cluster Mean/SD	**1.87**	**.82**	**1.88**	**.84**	**1.88**	**.83**	**LE**

The table presents the mean scores and standard deviations of male and female secondary school students on items measuring the influence of social support in the wellbeing of students living with sickle cell anemia. .The overall cluster mean was 1.88, with a standard deviation of 0.83, indicating a general trend toward disagreement (low agreement) across the measured items. However, individual items still revealed important insights into how students with sickle cell anemia relate socially within the school environment. These responses suggest that while some students feel accepted and have social support, there is also a notable tendency to conceal their condition, likely due to fear of stigmatization or misunderstanding. These low mean scores suggest limited involvement in physical and extracurricular activities, not necessarily because of fear, but possibly due to physical limitations or institutional barriers. Yet, the disagreement with feeling "isolated or lonely" may imply that students are not entirely socially withdrawn—they may be physically restricted but not emotionally excluded. Also of interest is the item "Some students make fun of me because I have sickle cell anemia" (M = 2.35), indicating that mockery or stigmatizing behavior does occur, although not universally. Gender-wise, male

and female students responded similarly, with very close mean scores and standard deviations across all items (SDs between 0.80–0.87), reflecting consistency and shared social experiences regardless of gender.

Discussion

Research Question One: To what extent do stress influence wellbeing of students living with sickle cell anemia?

The findings showed agreement by the students on stress influence on wellbeing of students living with sickle cell anemia. Items such as "I experience sudden pain crises while in school" (mean = 2.00) and "I cry or feel like crying because of the pain I go through" (mean = 2.01) showed strong affirmation. The overall cluster mean of 2.01 indicates that pain and emotional reactions are recurrent experiences among students with SCA. This aligns with findings by Anie and Green (2015) who reported that adolescents with sickle cell anemia frequently experience intense pain crises that affect their academic performance and emotional wellbeing. Also, Adewoye et al. (2017) confirmed that recurrent pain has a direct link to depressive symptoms and anxiety among adolescents with sickle cell disease in Nigeria. Therefore, this study confirms previous literature that stress affects secondary school students living with SCA, and these significantly impair their daily functioning in school settings.

Research Question Two: to what extent does social support influence wellbeing of students living with sickle cell anemia?

Students' responses revealed moderate agreement on social acceptance and friendship, but also acknowledged experiences of stigma and social withdrawal. Items such as "I feel accepted by my classmates despite my health condition" (mean = 2.41) and "I have close friends in school who understand my condition" (mean = 2.35) indicated a fair level of peer support. On the other hand, "I hide my health condition to avoid discrimination" (mean = 2.35) and "Some students make fun of me" (mean = 2.35) suggest a prevalent fear of stigma. These findings support the observations of Adegboye. (2021) who found that adolescents with chronic illnesses often experience exclusion from school activities and are more likely to conceal their condition to avoid discrimination. In line with Ezenwa et al. (2020), social withdrawal and fear of being misunderstood remain persistent challenges for adolescents living with sickle cell anemia in Nigerian secondary schools. Hence, while peer support exists, the fear of stigmatization continues to affect the psychological wellbeing and participation of these students in school activities.

Conclusion

The study comprehensively explored the psychological factors affecting the wellbeing of secondary students living with sickle cell anemia in Enugu State. Findings established that stress affects the wellbeing of the students at a high extent. The pain episodes and emotional reactions observed are consistent with clinical expectations of the disease. Social stigma and reduced participation in school activities further

compound their psychological vulnerability. Despite having peer acceptance in some cases, many students remain anxious and worried about being misunderstood. These results emphasize the need for wholistic support beyond academic provision. A combination of psychosocial counseling, awareness campaigns, and health services is required to address their needs. Ultimately, the study has illuminated an urgent gap in inclusive care within the secondary school environment.

Recommendations

1. School administrators should provide regular access to trained counselors to support students living with chronic conditions like sickle cell anemia.
2. Awareness programs should be conducted in schools to reduce stigma and promote empathy among students and teachers.
3. State health and education ministries should collaborate to ensure consistent medical support services for students with chronic illnesses.
4. Teachers should be trained to recognize the psychosocial needs of sickle cell students and offer flexible academic accommodations.
5. Parents should be sensitized on the importance of emotional and social support for their children living with sickle cell anemia.

Educational Implication of the Study

This study reveals the urgent need for integrating psychological health services into the school system, particularly for students with chronic health conditions. Schools are not only centers for academic learning but also key environments for emotional and social development. Students living with sickle cell anemia face unique challenges that impact learning, attendance, and classroom participation. Ignoring these challenges may exacerbate feelings of isolation and hinder academic achievement. By acknowledging the psychological dimensions of chronic illness, educators can tailor interventions to support affected learners. The findings support policies that promote inclusive education and student wellbeing. Therefore, guidance and counseling units must be strengthened to meet these growing demands.

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