



HEALTH-RELATED QUALITY OF LIFE AMONG SICKLE CELL ANEMIA PATIENTS: EXAMINING THE PREDICTABILITY OF COPING STYLES AND SOCIAL SUPPORT

Enyelunekpo R. Roberts¹, Keyna C. George², Kingsley Ekechi³ & Emmanuel E. Uye^{4*}

^{1, 3)} Department of Psychology, Rivers State University, Nkpolu-Oroworukwo, Nigeria.

^{2, 4)} Department of Psychology, University of Ibadan, Nigeria.

✉ Corresponding author:
emmanuel.e.uye@gmail.com

Abstracts

Health-related quality of life (HRQoL) has remained a recurring issue when evaluating the effect of sickle cell anemia on individuals so affected. While studies have been conducted to determine the management of the disease with the use of physical and drug treatments, psychosocial factors tend to be limited. Therefore, this study examines the predictability of coping styles and social support on health-related quality of life (HRQoL) among individuals diagnosed with sickle cell anemia in selected hospitals and clinics in Port Harcourt, Rivers State, Nigeria. Cross-sectional survey design survey was adopted while data were collected from 200 participants using validated questionnaires. Data collected were analyzed using multiple regression to test one hypothesis which was accepted at $p < .001$ level of significance. The results showed that coping styles and social support jointly predicted HRQoL among study participants, $R^2 = .372$, $F(3, 196) = 38.667$, $p < .001$. Furthermore, coping style components of emotion-focused: $\beta = .324$, $t = 5.062$, $p < .001$; active coping: $\beta = .251$, $t = 4.040$, $p < .001$, and social support ($\beta = .224$, $t = 3.506$, $p < .001$) independently predicted HRQoL among study participants. The study concludes that coping styles and social support are robust predictors of HRQoL among sickle cell anemia in the study population. The study recommends that parents, government agencies and other stakeholders should proactively support sickle cell anemia patients with a social support system to manage their health situations to improve their overall quality of life.

Keywords: Health-related quality of life, coping styles, social support, sickle cell anemia patients

INTRODUCTION

The World Health Organization (WHO, 2003) describes quality of life as a multidimensional construct that encompasses various aspects of an individual's well-being such as physical, emotional, social, and functional aspects of life. However, in the context of this study, Health-Related Quality of Life (HRQoL) is used to describe both the objective and subjective factors such as the physical health, psychological well-being, social relationships, and environmental factors that affect individuals diagnosed with sickle cell anemia (Mwazyunga et al., 2022; Osunkwo et al., 2021). This is the disease caused by a mutation in the hemoglobin gene that results in the production of abnormal hemoglobin molecules that cause red blood cells to become rigid and sickle-shaped (Kumar & Bhattacharya, 2024; Thomson et al., 2023). The global prevalence of sickle cell anemia is about 20 - 25 million people which is high among children under five years of age especially in sub-Saharan African countries (Thomson et al., 2023). Nigeria is reported to have the highest burden of sickle cell anemia disease, followed by India and the Democratic Republic of the Congo (Kumar & Bhattacharya, 2024). Akinbami et al. (2021) has confirmed that health-related quality of life among sickle cell patients in Nigeria is generally poor.

Some factors have been identified to help improve health-related quality of life among individuals diagnosed with sickle cell anemia. One factor considered in this study is coping style which is described as the cognitive and behavioral efforts individuals use to manage the demands of a stressful situation (Lazarus & Folkman, 1984). Coping styles could be adaptive or maladaptive which could be problem-focused or emotion-focused. While problem-focused coping style refers to efforts to change the stressful situation or manage its effects, emotion-focused coping style has to do with the efforts to regulate emotions and reduce distress (Ehondor et al., 2025; Abdulrashid et al., 2020). For example, studies have revealed that sickle cell anemia patients who used problem-focused coping styles have better pain management and improved health-related quality of life outcomes (Brown et al., 2017; Hossain et al., 2022). Closely related was Lim

et al. (2019) finding that coping style significantly affected health-related quality of life among sickle cell disease patients in Idi-Araba, Lagos Nigeria. In their own study, Ogunleye and Imonigie (2023) found adaptive coping strategies as a significant predictor of HRQoL among sickle cell anemia patients.

Conversely, emotion-focused coping style was related to worse pain which in turns decreased patients' physical HRQOL (Lim et al., 2019). In addition, Jonassaint et al. (2018) found that cognitive-behavioral interventions were effective in reducing pain and improving health-related quality of life among sickle cell anemia patients, therefore, cognitive-behavioral interventions that target coping skills and social support would be effective for helping sickle cell anemia patients. Finally, Hossain et. al. (2022) found that coping styles are emotion-driven efforts which are geared towards handling stress that has a link to improved mental and physical health. Therefore, improved mental and physical health are necessary components of health-related quality of life.

The second factor considered is social support which refers to the resources provided by others that help individuals cope with stress and improve their quality of life (Cohen & Wills, 1985). Social support comes in different forms such as emotional support, instrumental support, informational support and appraisal support (Barrera, 1986). Sources of social support include the family, friends, healthcare providers, and community organizations. In the context of sickle cell anemia patients, social support has been demonstrated as a protective factor against negative health outcomes that could improve their health-related QoL (Brown et al., 2017). Social support tends to provide sickle cell anemia patients with a sense of belonging, emotional comfort, and practical assistance to manage the demands of their sickness. The benefits of social support can vary depending on the source and type of support. For example, emotional support from family and friends have been identified as a particularly important source of support for SCA patients (Bullinger et al., 2006). However, Obeagu and Obeagu (2025) found tangible financial assistance and transportation as beneficial sources of social support to sickle cell anemia patients.

Although some studies have investigated the management of the sickle cell disease with the use of physical and drug treatments, studies using psychosocial factors to manage sickle cell anemia patients tend to be limited especially among non-clinical healthcare professionals leaving gaps in knowledge to fill. Therefore, this study examines the predictability of coping styles and social support on health-related quality of life (HRQoL) among individuals diagnosed with sickle cell anemia in selected hospitals and clinics in Port Harcourt, Rivers State, Nigeria. The study sought to seek an answer to the question: Would coping styles and social support jointly and independently predict health-related quality of life among sickle cell anemia patients?

The findings from this study would provide fresh insights into how coping styles and social support affect health-related quality of life among sickle cell anemia patients in Rivers State, Nigeria. In addition, the study would provide healthcare providers, government agencies and other stakeholders data to work with on how to design programs and policy that would help improve health-related quality of life among patients diagnosed with sickle anemia.

By identifying coping styles and social support as significant predictors of health-related quality of life, healthcare providers would design and implement interventions that would improve health-related quality of life among sickle cell anemia patients in Rivers State and Nigeria.

The transactional model of stress and coping (Lazarus & Folkman, 1984) has been applied to explain coping behavior among sickle cell anemia patients. The model describes coping as a dynamic process involving continuous appraisal of the stressor and the available coping resources to the patients. Coping is conceived to be influenced by cognitive and emotional factors, as well as social and cultural factors. The model has been used widely to guide interventions that aim to improve coping skills and HRQoL among sickle cell anemia patients (Crosby et al., 2015; Miraki et al., 2024).

The hypothesis stated was: Coping styles and social support would jointly and independently predict health-related quality of life among sickle cell anemia patients in Rivers State, Nigeria.

METHOD

Research Design

The study was a cross-sectional survey design where data were collected from participants using validated questionnaires. Coping style and social support were the independent variables while health-related quality of life was the dependent variable.

Setting

The study was carried out in two selected State Hospitals and one clinic that provide care for patients with sickle cell anemia in Port Harcourt, Rivers State, Nigeria.

Sampling and Sampling Technique

Purposive sampling technique was to select the study population while convenience sampling method was used for the distribution of questionnaires to the potential participants.

Instruments/Measures

Validated scales were used for data collection:

Coping in Chronic Pain Patients Scale was used to assess coping styles among study participants. It has two subscales: active coping and emotional focused coping styles. The scale is presented in a 5-point Liert's format ranging from strongly disagree to strongly agree. The active coping subscale has 12-item including: "I've always felt I could make my life what I wanted to make of it" and "I realize that my feelings are valid and important". The emotionally focused coping style has 15-item including: "I take time to figure out what I am really feeling" and "I allow myself to express my emotions". The coping style scale has been widely used among Nigerian samples (Fakorede et al., 2025). In the current study, Cronbach's $\alpha = .83$ (Active coping style) and Cronbach's $\alpha = .87$ (emotional focused coping style) were obtained.

Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1998) was used to determine social support among study participants. It is a 12-item self-reported measure assessing the perceived social support from family, friends, and significant others. Participants rated the items on a 7-point Likert's format ranging from (1 = very strongly disagree, 7 = very strongly agree). Sample items include: "There is a special person who is around when I am in need" and "My friends really try to help me". The scale has been used among Nigerian samples (Roberts et al., 2025). In the current study, Cronbach's $\alpha = .81$ was obtained.

World Health Organization Quality of Life-BREF Scale (WHOHRQoL-BREF, 2003) was used to assess health-related quality of Life among study participants. It is a 26-item scale that evaluates individuals' HRQoL across four domains namely: physical, psychological, social relationships, and environment HRQoL. The scale is rated on a 5-point Likert's format ranging from "Very poor (Very dissatisfied), Poor (Dissatisfied), Neither poor nor good (Neither satisfied nor dissatisfied, Good (Satisfied), Very good (Very satisfied)". Sample items include: "How satisfied are you with your health?" and "How satisfied are you with your health?" The Cronbach's alpha obtained was 0.61. The scale has been validated and used across different populations and samples in Nigeria (Fakorede et al., 2024). Cronbach's $\alpha = .89$ was obtained for the composite scale in the current study.

Ethical Considerations:

Strict ethical procedures were adhered to in the process of carrying out this study. Informed consent was sought and obtained from individual participants. The principle of voluntary participation was duly enforced. Confidentiality was guaranteed. No incriminating data were collected from the participants. Participants were informed to discontinue at any point when they want to without any penalty.

Procedure

A letter of introduction was collected from the Department of Psychology, Rivers State University, Nkpulu-Oroworukwo which was used to identify the researchers by the Medical Authority where the study was carried out. Potential participants were met in their clinic days and solicited to participate in the study. They were duly informed that participation in the study was voluntary and assured of the confidentiality of their responses as no personal data were collected from them. They were asked to discontinue with the study at any point they felt uncomfortable without penalty. Only those who agreed to participate in the study were given the questionnaires to complete which took less than 18 minutes. Data collection was for the period of eight days of clinic visits by the researchers. A total of 204 questionnaires were administered and collected on the spot. However, during screening and coding, four questionnaires were poorly filled and were removed leaving 200 used for the analysis.

Data Analysis

IBM SPSS version 26 was used for data analysis. Descriptive and inferential statistics were calculated. Hypotheses 1 and 2 were tested using multiple regressions while hypothesis 3 was tested using independent samples t-test. All hypotheses were accepted at $p < .001$ level of significance.

RESULTS AND DISCUSSION

Table 1: Participants demographic variables

Variable	Category	Frequency	Percent
Age	Below 30 yrs	101	51
	30 – 39 yrs	64	32
	40 yrs & above	35	17
Gender	Male	120	60
	Female	80	40

Religion	Christian	150	75
	Islam	26	13
	Traditionalist	24	12
Education	Primary	28	14
	Secondary	124	62
	Tertiary	48	24
Marital Status	Single	184	92
	Married	16	8
Total		200	100.0

Table 1 presents demographic data of the study participants. The data revealed that 51% of the participants were aged below 30 years while 60% of them were males. In terms of education, 62% of them were in secondary school, and 92% were singles. Finally, 75% of the participants were confessed Christians.

Hypothesis testing...

H1: Coping styles (emotion-focused and active-coping styles) and social support would jointly and independently predict health-related quality of life among sickle cell anemia patient in Rivers State, Nigeria. The hypothesis was tested using multiple regression and the result is presented in Table 2.

Table 2 Regression Coefficient of Predictor Variables on HRQoL Among Study Participants

Model		Unstandardized Coefficients		Standardized Coefficients β	t	Sig.
		B	Std. Error			
1	(Constant)	23.294	4.170		5.586	.000
	Social Support	.376	.107	.224	3.506	.001
	Emotionally Focused Coping Style	.442	.087	.324	5.062	.000
	Active Coping Style	.444	.110	.251	4.040	.000

N = 200, $R^2 = .372$, $df = 3, 196$, $F = 38.667$. Dependent Variable: Health-Related Quality of Life (HRQoL)

Table 2 shows the result of the multiple regression analysis of the predictors of health-related quality of life (HRQoL) among sickle cell anemia patients in Rivers State. The result revealed coping styles and social support jointly predicted HRQoL among study participants, $R^2 = .372$, $F(3, 196) = 38.667$, $p < .001$. This means that the predictor variables accounted for 37.2 % variance in HRQoL among sickle cell anemia patients in the study population. Furthermore, coping style components (emotion-focused: $\beta = .324$, $t = 5.062$, $p < .001$; active coping: $\beta = .251$, $t = 4.040$, $p < .001$), and social support ($\beta = .224$, $t = 3.506$, $p < .001$) independently predicted HRQoL among study participants. Therefore, the hypothesis was supported.

DISCUSSION

The hypothesis that coping styles (emotion-focused and active-coping styles) and social support would jointly predict health-related quality of life (HRQoL) was confirmed. Coping styles and social support explained 37.2% of the variance in HRQoL among sickle cell anemia patients in the study population. When individuals develop emotionally-focused strategies and adopt an active coping style, this leads to improvement in the health-related quality of life of these patients. This finding lent credence to previous results by Fakorede et al. 2024 and Ogunleye and Imonigie (2023) that adopting robust coping styles with adequate social supports from family members, friends and other stakeholders would significantly improve health-related quality of life among sickle cell anemia patients. In addition, the current findings corroborated results obtained by Hossain et al (2022) that coping styles are emotion-driven efforts which are geared towards handling stress that has a link to improved mental and physical health-related quality of life among sickle cell anemia patients.

Furthermore, each component of coping styles and social support independently predicted health-related quality of life among study participants. What this means is that, emotional-focused coping style explained 25.2% variance in HRQoL compared to active coping style of 19.3% and then social support of 19.6%. This means that each of the predictors significantly contributes to health-related quality of life experienced by sickle cell anemia patients. This finding corroborated results obtained by previous studies that emotional-focused coping style (Fakorede et al., 2024; Ehondor et al., 2025; Ogunleye & Imonigie,

2023), active coping style (Fakorode et al., 2025; Lim et al., 2019) and social support (Fakorede et al., 2024; Oyeniyi et al., 2025) are robust predictors of health-related quality of life across different samples and populations including those with sickle cell health-related sickness. This means that the use of emotion-focused coping style significantly enhanced the emotional well-being and better social functioning among the sickle cell anemia patients in the study population.

CONCLUSION

The findings in this study have confirmed that coping styles and social support contributes significantly to the health-related quality of life (HRQoL) among individuals affected by sickle cell anemia in the study population. Specifically, emotional-focused coping style and social support significantly contributed to HRQoL than adapting coping styles among study participants.

The study recommends government and other stakeholders should design programs that incorporate counseling, peer support networks, and educational resources to address specific challenges faced by sickle cell anemia patients.

LIMITATIONS OF THE STUDY

The study has some limitations that need to be addressed in further study. Because of the sensitive nature of the study, use of self-reported questionnaires for data collection introduced social desirability. Further study would benefit from documentary evidence from the clinics and focus group discussions to triangulate self-reported data. In addition, cross-sectional study using small sample size limits generalization of study results, therefore, adopting longitudinal study that increases study participants from different clinics with different backgrounds would improve generalization of study findings. Finally, further study should include learned helplessness and personality traits to explore health-related quality of life among sickle cell anemia patients.

REFERENCES

- Abdulrashid, I., Lawal, S., Yunusa, U., Ibrahim, A.H., Kombo, S.A., Hassan, M.H., Nasidi, K.N., & Muhammad, A. (2020). Health related quality of life of patients with sickle cell disease attending a secondary healthcare facility in Kano State, Nigeria. *Bayero Journal of Nursing & Health Care*, 2(2), 697-706.
- Akinbami, A.A., Kalejaiye, O.O., Uche, E.I., Kareem, O.A., Bamiro, R.A., Augustine, B., et al. (2021). Health related quality of care among adults living with sickle cell disease in Lagos, Nigeria. *International Journal of Scientific Report*, 7(3):147-154 <https://doi.org/10.18203/issn.2454-2156.IntJSciRep20210542>
- Barrera, M. (1986). Distinctions between social support concepts, measures, and models *American Journal of Community Psychology*, 14,(4):413-445 <https://doi.org/10.1007/BF00922627>
- Cohen, S. & Wills, T. A. (1985). Stress, Social Support, and the Buffering Hypothesis. *Psychological Bulletin*, 98(2):310-357 <https://doi.org/10.1037/0033-2909.98.2.310>
- Crosby, L. E., Quinn, C. T., & Kalinyak, K. A. (2015). A biopsychosocial model for the management of patients with sickle-cell disease transitioning to adult medical care. *Advances in therapy*, 32(4), 293–305. <https://doi.org/10.1007/s12325-015-0197-1>
- Ehondor, E.G., Daramola, O.M., & Uye, E. E. (2025). Academic impairment, social support and resilient behavior among physically-challenged students. *Fenomena: Journal of Social Sciences*, 24(1), 81-92 <https://doi.org/10.35719/fenomena.v24i1.232>
- Fakorede, K. J., Ajayi, M.S. & Uye, E.E. (2025). Psychological adjustment among military personnel: Exploring coping styles, officer cadres and gender. *Indonesian Journal of Educational & Psychological Science*, 3(1), 1-10 <https://doi.org/10.59890/ijeps.v3i1.217>
- Fakorede, K., J., Obosi, A. O. & Uye, E. E. (2024). Coping style, social support, and resilience as predictors of quality of life among combatant officers in Nigeria. *Nigerian Psychological Research*, 9(1), 102-110.
- Fakrogha, B.E., Olapegba, P.O. & Uye, E. E. (2025). Psychopathological predictors of quality of life among undergraduates of the University of Ibadan, Nigeria. *International Journal of Advanced Social Sciences & Education (IJASSE)*, 3(2), 107-114 <https://doi.org/10.59890/ijasse.v3i2.1>

- Hossain, M. A., Shafin, R., Ahmaed, M. S., Rana, S., Waltan, L. S. et. al. (2022). Health Related Quality of Life and Coping Strategies adopted by COVID-19 Survivors: A nationwide cross-sectional study in Bangladesh. *PloS One*, 17(11): eo277694. <https://doi.org/10.1371/journal.pone.0277694>
- Jonassaint, C. R., Lalama, C. M., Carroll, C. P., Badawy, S. M., Hamm, M. E., Stinson, J. N., Lalloo, C., Saraf, S. L., Gordeuk, V. R., Cronin, R. M., Shah, N., Lanzkron, S. M., Liles, D., O'Brien, J. A., Trimmell, C., Bailey, L., Lawrence, R. H., Saint Jean, L., DeBaun, M., De Castro, L. M., ... Abebe, K. Z. (2024). Digital cognitive behavioral therapy vs education for pain in adults with sickle cell disease. *Blood advances*, 8(24), 6257–6266. <https://doi.org/10.1182/bloodadvances.2024013861>
- Kumar, A. & Bhattacharya, S. (2024). Sickle cell disease: a comparative perspective on global and national initiatives. *Frontier of Hematology*, 3: 01-06, 1457158 <https://doi.org/10.3389/frhem.2024.1457158>
- Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer Publishing Company.
- Lim, C. S., Karlson, C., Edmond, S. N., Welkom, J. S., Osunkwo, I., & Cohen, L. L. (2019). Emotion-focused avoidance coping mediates the association between pain and health-related quality of life in children with sickle cell disease. *Journal of pediatric hematology/oncology*, 41(3), 194–201. <https://doi.org/10.1097/MPH.0000000000001429>
- Miraki, M.R., Nasirzadeh, M., Sayadi, A.R., & AbdolKarimi, M. (2024).Effect of the Lazarus' Transactional Model Based Intervention on Stress Control and Coping in Patients with Type 2 Diabetes. *Health Education & Health* ,12(4):597-603. <https://doi.org/10.58209/hehp.12.4.597>
- Mwazyunga, Z., Ambrose, E. , Kayange, N. , Bakalemwa, R. , Kidenya, B. , Smart, L. & Hokororo, A. (2022) Health related quality of life among children with sickle cell anemia in Northwestern Tanzania. *Open Journal of Blood Diseases*, 12, 11-28. <https://doi.org/10.4236/ojbd.2022.122002>.
- Obeagu, E. I. & Obeagu, G. U. (2025).Public-Private Partnerships in Tackling Sickle Cell Disease in Uganda: A Narrative Review *Annals of Medicine & Surgery*, 87:3339–3355 <http://dx.doi.org/10.1097/MS9.0000000000003082>
- Ogunleye, A.J. & Imonigie, A.U.J.(2023). Influence of health-related quality of life on coping strategies among persons living with sickle cell disorder in Nigeria. *African Journal for the Psychological Study of Social Issues*, 26(1), 129-137.
- Osunkwo, I., Andemariam, B., Minniti, C. P., et al. (2021). Impact of sickle cell disease on patients' daily lives, symptoms reported, and disease management strategies: Results from the international Sickle Cell World Assessment Survey (SWAY). *American Journal Hematology*, 96:404–417. <https://doi.org/10.1002/ajh.26063>
- Oyenyi, O.P., Ehondor, E.G., James, O.O., Uye, E.E.(2025). Personality traits, resilience and perceived social support predicting quality of life among bereaved young adults. *Jurnal Saintifik*, 23(2), 127-136
- Roberts, E. R, Owoh, U. J., Atunwa, S. A. & Uye, E.E. (2025). Quality of life among adult samples: Does perceived social support and health-seeking behaviour counts? *Philanthropy: Journal of Psychology Positive & Mental Health Studies*, 9(1), 1-11 <https://doi.org/10.26623/philanthropy.v9i1.11851>
- Roberts, E.R., Ezenwora, C.A., James, O.O., & Uye, E.E. (2025). Maternal stress and anxiety on mental health among pregnant women *SOCIORA: Journal of Social Sciences & Humanities*, 2(1), 56-64 <https://doi.org/10.33753/sociora.v2i1.46>
- Thomson et al .(2023). Global, regional, and national prevalence and mortality burden of sickle cell disease : a systematic analysis from the global burden of disease study 2021. *The Lancet Haematology*, 10(8), e585-e599 [https://doi.org/10.1016/s2352-3026\(23\)00118-7](https://doi.org/10.1016/s2352-3026(23)00118-7)
- World Health Organization (2003) WHO-BREF: Introduction, administration, scoring and generic version of the assessment. Geneva.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), 30-41 <https://doi.org/10.1207/s15327752jpa.5201.2>