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Cultural and Social Determinants of Sickle Cell Anemia Risk in Zimbabwe: A Narrative Review

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Abstract

Sickle Cell Anemia (SCA), a hereditary disorder characterized by abnormal hemoglobin production, remains a significant health burden in Zimbabwe. The interplay of cultural beliefs, marriage practices, and reliance on traditional medicine shapes the epidemiology and management of SCA within local communities. Limited awareness about genetic risks and the perpetuation of myths about the disease further hinder early diagnosis and intervention, particularly in rural areas. Traditional healers, often the first point of care, play a pivotal role in influencing healthcare-seeking behavior, sometimes delaying access to evidence-based treatment. Social determinants such as stigma, economic challenges, and disparities in healthcare access exacerbate the impact of SCA on individuals and families. Patients frequently experience social isolation due to misconceptions about the disease, while the financial burden of managing chronic symptoms creates additional strain on affected households. Inadequate healthcare infrastructure in rural areas further compounds these challenges, leaving many patients without access to routine monitoring or life-saving interventions such as blood transfusions and medications.

Keywords: Sickle Cell Anemia, Zimbabwe, Cultural Determinants, Social Determinants, Genetic Counseling

Introduction

Sickle Cell Anemia (SCA) is a genetic blood disorder caused by the inheritance of abnormal hemoglobin genes from both parents. It is characterized by the production of sickle-shaped red blood cells, which can block blood flow and lead to severe pain, chronic anemia, and multi-organ complications. While SCA is a global health concern, its prevalence is highest in sub-Saharan Africa, including Zimbabwe, due to the protective advantage of the sickle cell trait against malaria. In Zimbabwe, SCA remains underreported and undertreated, primarily due to cultural and social determinants that influence the disease's prevalence, diagnosis, and management [1-4]. The genetic nature of SCA poses unique challenges, particularly in communities where consanguineous or kinship-based marriages are common. Such practices, deeply rooted in tradition, increase the likelihood of inheriting sickle cell genes from both parents. This highlights the importance of understanding how cultural practices impact the transmission of SCA and the potential benefits of targeted genetic counseling programs. Despite advancements in genetic research and medical management, cultural beliefs and practices often hinder early diagnosis and effective treatment of SCA in Zimbabwe [5]. Traditional medicine plays a significant role in healthcare delivery, especially in rural Zimbabwe, where access to modern healthcare services is limited. Many communities attribute the symptoms of SCA to spiritual causes, such as curses or ancestral punishment, leading families to seek traditional remedies rather than evidence-based medical interventions. While traditional medicine may offer some relief, it often delays access to comprehensive care, exacerbating the disease's burden [6-7].

Social determinants, such as stigma and lack of awareness, further complicate the management of SCA in Zimbabwe. Individuals with SCA often face discrimination due to misconceptions about the disease, resulting in social isolation and reluctance to seek medical care. Moreover, limited public awareness about the hereditary nature of SCA contributes to the cycle of affected births. Community education programs are essential for dispelling myths, reducing stigma, and promoting informed reproductive decisions to combat SCA's prevalence [8-10]. Economic challenges also play a significant role in shaping the SCA landscape in Zimbabwe. The cost of managing SCA is high, requiring regular healthcare visits, medications, and, in severe cases, blood transfusions. For many families, especially in rural areas, these costs are prohibitive, leaving patients without access to necessary care. Addressing economic barriers is crucial to improving health outcomes and quality of life for individuals living with SCA [11-12]. In addition to cultural and economic factors, disparities in healthcare access significantly impact the diagnosis and treatment of SCA. Rural areas, where a large proportion of the population resides, face critical shortages of healthcare facilities, trained personnel, and diagnostic tools. These disparities result in delayed or missed diagnoses, which can lead to severe complications and premature mortality. Strengthening healthcare infrastructure and providing equitable access to care are essential for mitigating the disease's burden [13-15]. This review explores the cultural and social determinants of SCA risk in Zimbabwe, focusing on how these factors influence the disease's prevalence, awareness, and management.

Cultural Determinants

1. Marriage Practices and Genetic Transmission

In many Zimbabwean communities, marriage practices rooted in kinship and traditional customs can significantly influence the genetic transmission of Sickle Cell Anemia (SCA). Consanguineous marriages, although less common than in some other regions, occur within tightly knit communities, increasing the likelihood of couples both carrying the sickle cell trait (HbAS). Without adequate genetic counseling or awareness, these unions contribute to the birth of children with SCA (HbSS). Addressing these practices through culturally sensitive genetic counseling programs is

essential for breaking the cycle of inheritance and reducing disease prevalence [16-18].

2. Traditional Beliefs and Misconceptions

Cultural beliefs and misconceptions about SCA are prevalent in Zimbabwe, particularly in rural areas where traditional medicine and spiritual practices dominate. Symptoms of SCA, such as recurrent pain and fatigue, are often attributed to curses, witchcraft, or ancestral displeasure. These interpretations not only delay medical diagnosis and treatment but also contribute to stigma and isolation for affected individuals [19].

3. Role of Traditional Medicine

Traditional medicine is deeply ingrained in Zimbabwean culture and remains the first line of care for many families, especially in underserved regions. Herbal remedies and spiritual healing practices are commonly sought to alleviate SCA symptoms. While some traditional methods may provide symptomatic relief, they often lack the efficacy to address the underlying pathophysiology of the disease. Moreover, reliance on traditional medicine can delay the uptake of modern healthcare solutions, exacerbating disease complications. Integrating traditional medicine into the formal healthcare system, with appropriate training and guidelines, could help bridge the gap between cultural practices and evidence-based care [20-22].

4. Cultural Attitudes toward Genetic Testing and Counseling

Genetic testing and counseling are relatively new concepts in Zimbabwe, often met with resistance due to cultural and religious beliefs. Some communities view genetic testing as intrusive or unnecessary, while others fear it may lead to stigmatization or discrimination. Additionally, the lack of culturally tailored counseling services limits the accessibility and acceptability of these interventions. Efforts to educate communities about the benefits of genetic testing, framed within the context of cultural values and family health, can promote greater acceptance and uptake [23-25].

5. Community Engagement and Knowledge Dissemination

The level of community engagement in health education significantly impacts the management of SCA in Zimbabwe. Traditional leaders, elders, and community health workers often serve as trusted sources of information. Engaging these key stakeholders in disseminating accurate information about SCA can help counter misinformation, encourage early diagnosis, and promote preventive measures. Culturally sensitive campaigns that respect local traditions and languages are particularly effective in increasing awareness and reducing stigma [26-29].

6. Impact of Religious Practices

Religious practices also play a role in shaping perceptions and behaviors related to SCA. For instance, some faith-based groups may discourage the use of medical interventions, relying solely on prayer or spiritual healing. Conversely, religious organizations often serve as vital platforms for health promotion and education. Collaborating with religious institutions to provide accurate information about SCA and its management can help align medical and spiritual approaches, ensuring holistic support for affected families [30-31.

Social Determinants

1. Healthcare Access and Infrastructure

Access to healthcare is a critical determinant of Sickle Cell Anemia (SCA) management in Zimbabwe. Rural areas, where a significant portion of the population resides, face limited availability of healthcare facilities, trained medical personnel, and diagnostic tools. This disparity delays diagnosis and results in inadequate management of SCA, leading to severe complications. Urban areas, while better equipped, often suffer from overcrowding and resource constraints, leaving many patients underserved. Strengthening healthcare infrastructure and ensuring equitable distribution of resources are essential for improving SCA outcomes [32-33].

2. Awareness and Education

Public awareness about SCA and its genetic basis is limited in many communities across Zimbabwe. This lack of knowledge contributes to the perpetuation of myths and misconceptions about the disease. Without proper education, individuals are less likely to seek genetic counseling or prioritize early diagnosis and management. Community-based education programs that incorporate local languages and cultural contexts are necessary to raise awareness, dispel myths, and empower families to make informed decisions about their health [34-35].

3. Economic Challenges

Economic constraints significantly impact the management of SCA in Zimbabwe. Many families, particularly in rural areas, live below the poverty line and struggle to afford healthcare costs. SCA management requires regular clinic visits, medications, and, in severe cases, blood transfusions, which are often financially out of reach. The financial burden forces families to prioritize immediate needs over long-term care, exacerbating disease progression. Subsidized healthcare services, financial assistance programs, and partnerships with non-governmental organizations are crucial for alleviating these economic barriers [36-37].

4. Stigma and Social Marginalization

Stigma associated with SCA is a pervasive issue in Zimbabwean society. Individuals with SCA are often ostracized due to misconceptions about the disease, such as beliefs that it is contagious or the result of a curse. This social marginalization can lead to isolation, low self-esteem, and reluctance to seek medical care. Addressing stigma requires targeted community engagement and awareness campaigns that promote understanding and empathy toward individuals with SCA. Empowering individuals with SCA to share their experiences can also help reduce stigma and foster a supportive environment [38-40].

5. Gender and Care Dynamics

Gender plays a significant role in the care dynamics of SCA patients. In many Zimbabwean households, women and girls often bear the responsibility of caregiving for affected family members, adding to their already considerable workload. This dynamic can strain household resources and limit educational or economic opportunities for female caregivers. Additionally, women with SCA face unique challenges, such as pregnancy-related complications, which may not receive adequate attention in a healthcare system already under strain. Gender-sensitive healthcare policies are necessary to address these challenges and ensure equitable support for both patients and caregivers [41].

6. Policy and Advocacy

National policies and advocacy efforts play a pivotal role in addressing the social determinants of SCA. Currently, SCA often receives less attention than other health priorities in Zimbabwe, leading to gaps in funding, research, and program implementation. Strengthening policies that prioritize genetic counseling, screening programs, and comprehensive care for SCA patients is essential. Advocacy efforts should focus on raising awareness among policymakers about the societal burden of SCA and the need for targeted interventions [42-43].

7. Social Support Systems

Robust social support systems are critical for managing the long-term impacts of SCA. Extended family networks, community-based organizations, and peer support groups provide essential emotional and logistical support for individuals with SCA and their families. Expanding these networks through formalized programs and partnerships with local organizations can improve quality of life and reduce the disease's social burden.

Recommendations

1. Strengthening Genetic Counseling Services

To reduce the prevalence of Sickle Cell Anemia (SCA) in Zimbabwe, integrating genetic counseling into community healthcare systems is essential. These services should focus on educating individuals and families about the genetic nature of SCA, inheritance patterns, and reproductive options. Mobile clinics and outreach programs can help reach remote areas where access to healthcare is limited. Additionally, training healthcare workers in culturally sensitive counseling can improve community acceptance and engagement.

2. Increasing Public Awareness

Comprehensive awareness campaigns are needed to dispel myths and misconceptions surrounding SCA. These campaigns should utilize local languages, storytelling, and traditional communication channels to educate communities about the disease's symptoms, causes, and management. Partnering with schools, religious organizations, and community leaders can help amplify these messages and ensure they reach diverse audiences.

3. Improving Healthcare Access and Infrastructure

Addressing healthcare disparities in rural and underserved areas is critical. Efforts should focus on equipping health facilities with diagnostic tools, medications, and trained personnel to manage SCA effectively. Establishing specialized sickle cell clinics and integrating SCA care into primary healthcare services can ensure timely diagnosis and comprehensive management. Policies that subsidize the cost of care for low-income families can further enhance accessibility.

4. Engaging Traditional Healers and Integrating Traditional Medicine

Given the reliance on traditional medicine in many communities, engaging traditional healers in the management of SCA is vital. Training programs can equip traditional healers with basic knowledge about SCA, enabling them to refer patients to modern healthcare services when necessary. Collaborative efforts can also promote a complementary approach, blending traditional practices with evidence-based medical care.

5. Economic Support for Affected Families

Providing financial assistance and social support to families managing SCA is essential for reducing the economic burden of the disease. This can be achieved through government subsidies, microfinance programs, and partnerships with non-governmental organizations. Establishing community-based initiatives, such as income-generating projects, can empower affected families and enhance their ability to afford long-term care.

6. Policy Development and Advocacy

National health policies should prioritize SCA by allocating resources for research, prevention, and treatment programs. Advocacy campaigns targeting policymakers can raise awareness about the social and economic burden of SCA and the need for sustained investments. Developing policies that mandate newborn screening for SCA and integrating it into routine healthcare services can facilitate early detection and intervention.

7. Promoting Community-Based Support Systems

Strengthening community-based support systems can provide emotional and practical assistance to individuals with SCA and their families. Establishing peer support groups, counseling services, and mentorship programs can help reduce stigma and foster a sense of belonging among patients. Encouraging community ownership of these initiatives ensures sustainability and relevance to local needs.

8. Encouraging Research and Data Collection

Expanding research efforts on SCA in Zimbabwe is crucial for understanding its epidemiology, cultural

and social determinants, and effective management strategies. Establishing national registries and databases can improve tracking of disease prevalence and outcomes, guiding evidence-based interventions. Collaborations with academic institutions and international organizations can enhance research capacity and resource availability.

Conclusion

Sickle Cell Anemia (SCA) remains a significant public health challenge in Zimbabwe, shaped by complex cultural and social determinants. Cultural factors, including traditional marriage practices, misconceptions, reliance on traditional medicine, and resistance to genetic testing, contribute to the perpetuation of the disease and delay in accessing appropriate care. Social determinants, such as limited healthcare infrastructure, economic challenges, stigma, and gender dynamics, further exacerbate the burden of SCA on affected individuals and families.

Addressing these determinants requires a multifaceted approach that combines culturally sensitive genetic counseling, community education, and improved healthcare accessibility. Strengthening healthcare policies, fostering partnerships with traditional and religious leaders, and promoting social support systems are critical steps in mitigating the impact of SCA. Additionally, targeted advocacy and research efforts can guide evidence-based interventions and ensure that resources are allocated to where they are most needed.

References

1. Obeagu EI, Ochei KC, Nwachukwu BN, Nchuma BO. Sickle cell anaemia: a review. Scholars Journal of Applied Medical Sciences. 2015; 3(6B):2244-2252.
2. Obeagu EI. Erythropoeitin in sickle cell anaemia: a review. International Journal of Research Studies in Medical and Health Sciences. 2020; 5(2):22-28.
3. Obeagu EI, Obeagu GU. Sickle cell anaemia in pregnancy: a review. International Research in Medical and Health Sciences. 2023; 6(2):10-13.
4. Obeagu EI. Sickle cell anaemia: haemolysis and anemia. Int. J. Curr. Res. Chem. Pharm. Sci. 2018; 5(10):20-21.
5. Musuka HW, Iradukunda PG, Mano O, Saramba E, Gashema P, Moyo E, Dzinamarira T. Evolving Landscape of Sickle Cell Anemia Management in Africa: A Critical Review. Tropical Medicine and Infectious Disease. 2024; 9(12):292.
6. Hagan Asamoah E. Perceptions and Experiences of Sickle Cell Disease Patients and Parents/Caretakers on Alternative Treatment Options for Pain Management. 2021.
7. Asamoah EH. *Perceptions and Experiences of Sickle Cell Disease Patients and Parents/Caretakers on Alternative Treatment Options for Pain Management* (Doctoral dissertation, Walden University). 2021.
8. Obeagu EI, Ogunnaya FU, Obeagu GU, Ndidi AC. Sickle cell anaemia: a gestational enigma. Migration. 2023; 17:18.
9. Obeagu EI, Obeagu GU. Implications of climatic change on sickle cell anemia: A review. Medicine. 2024; 103(6):e37127.
10. Obeagu EI, Ubosi NI, Obeagu GU, Egba SI, Bluth MH. Understanding apoptosis in sickle cell anemia patients: Mechanisms and implications. Medicine. 2024; 103(2):e36898.
11. Tibi P, McClure RS, Huang J, Baker RA, Fitzgerald D, Mazer CD, Stone M, Chu D, Stammers AH, Dickinson T, Shore-Lesserson L. STS/SCA/AmSECT/SABM update to the clinical practice guidelines on patient blood management. The Journal of ExtraCorporeal Technology. 2021; 53(2):97-124.
12. Obeagu EI, Adias TC, Obeagu GU. Advancing life: innovative approaches to enhance survival in sickle cell anemia patients. Annals of Medicine and Surgery. 2024 Oct 1;86(10):6021-36.
13. Kong MH, Peterson ED, Fonarow GC, Sanders GD, Yancy CW, Russo AM, Curtis AB, Sears Jr SF, Thomas KL, Campbell S, Carlson MD. Addressing disparities in sudden cardiac arrest care and the underutilization of effective

therapies. American heart journal. 2010; 160(4):605-618.
14. Chahine M, Fontaine JM, Boutjdir M. Racial disparities in ion Channelopathies and inherited cardiovascular diseases associated with sudden cardiac death. Journal of the American Heart Association. 2022; 11(6):e023446.
15. Wahab S, Kelly K, Klingler M, Pirovic A, Futch K, Rennie C, Durham D, Herber D, Gramling G, Price S, Costin JM. Impact of Race, Socioeconomic Status, and Geography on Healthcare Outcomes for Children with Sickle Cell Disease in the United States: A Scoping Review. Cureus. 2024; 16(3).
16. Obeagu EI, Babar Q. Covid-19 and sickle cell anemia: susceptibility and severity. J. Clinical and Laboratory Research. 2021; 3(5):2768-2787.
17. Obeagu EI. Maximizing longevity: erythropoietin's impact on sickle cell anaemia survival rates. Annals of Medicine and Surgery. 2024; 86(3):1570-1574.
18. Obeagu EI, Obeagu GU. Improving outcomes: integrated strategies for diabetes and sickle cell anemia. Int. J. Curr. Res. Chem. Pharm. Sci. 2024; 11(2):20-29.
19. Obeagu EI, Obeagu GU. Oxidative Damage and Vascular Complications in Sickle Cell Anemia: A Review. Elite Journal of Haematology. 2024; 2(3):58-66.
20. Obeagu EI, Obeagu GU. Malnutrition in sickle cell anemia: Prevalence, impact, and interventions: A Review. Medicine. 2024; 103(20):e38164.
21. Obeagu EI, Obeagu GU. Hemolysis Challenges for Pregnant Women with Sickle Cell Anemia: A Review. Elite Journal of Haematology. 2024; 2(3):67-80.
22. Obeagu EI. Sickle cell anaemia: Historical perspective, Pathophysiology and Clinical manifestations. Int. J. Curr. Res. Chem. Pharm. Sci. 2018;5(11):13-15.
23. Gustafson SL, Gettig EA, Watt-Morse M, Krishnamurti L. Health beliefs among African American women regarding genetic testing and counseling for sickle cell disease. Genetics in Medicine. 2007; 9(5):303-310.
24. Long KA, Thomas SB, Grubs RE, Gettig EA, Krishnamurti L. Attitudes and beliefs of African-Americans toward genetics, genetic testing, and sickle cell disease education and awareness. Journal of genetic counseling. 2011; 20:572-592.
25. Stevens EM, Patterson CA, Tchume-Johnson T, Antiel RM, Flake A, Smith-Whitley K, Barakat LP. Parental attitudes towards prenatal genetic testing for sickle cell disease. Journal of pediatric hematology/oncology. 2019; 41(8):579-585.
26. Obeagu EI, Obeagu GU. From Classroom to Home: Strengthening the Continuum of Sickle Cell Disease Knowledge. Elite Journal of Health Science. 2023; 1(1):23-29.
27. Obeagu EI, Obeagu GU. From Awareness to Action: Encouraging Adolescent Engagement in Sickle Cell Disease Prevention. Elite Journal of Public Health. 2023; 1(1):42-50.
28. Hines J, Mitchell MJ, Crosby LE, Johnson A, Valenzuela JM, Kalinyak K, Joiner C. Engaging patients with sickle cell disease and their families in disease education, research, and community awareness. Journal of prevention & intervention in the community. 2011; 39(3):256-272.
29. Poku BA, Pilnick A. Research knowledge transfer to improve the care and support of adolescents with sickle cell disease in Ghana. Health Expectations. 2022; 25(5):2515-2524.
30. Obeagu EI, Obeagu GU. Community Leaders as Educators: Mobilizing for Sickle Cell Disease Reduction. Elite Journal of Health Science. 2023; 1(1):37-43.
31. Obeagu EI, Adias TC. Global Partnerships: Collaborative Efforts for International Sickle Cell Disease Education. Int. J. Curr. Res. Chem. Pharm. Sci. 2024; 11(5):31-37.
32. Obeagu EI, Obeagu GU. Immunization strategies for individuals with sickle cell anemia: A narrative review. Medicine. 2024; 103(38):e39756.
33. Obeagu EI, Obeagu GU. Dual management: diabetes and sickle cell anemia in patient care. Elite Journal of Medicine. 2024; 2(1):47-56.
34. Hines J, Mitchell MJ, Crosby LE, Johnson A, Valenzuela JM, Kalinyak K, Joiner C. Engaging patients with sickle cell disease and their families in disease education, research, and community awareness. Journal of prevention &

intervention in the community. 2011; 39(3):256-272.
35. Aygun B, Odame I. A global perspective on sickle cell disease. Pediatric blood & cancer. 2012; 59(2):386-390.
36. Obeagu EI. Comprehensive Insights into Eosinophil Interactions in Sickle Cell Anemia Severity. Haematol Int J. 2024; 8(1):00223.
37. Obeagu EI. Potassium dynamics in sickle cell anemia: clinical implications and pathophysiological insights. Annals of Medicine and Surgery. 2024; 86(10):6037-45.
38. Anie KA. The intersection of sickle cell disease, stigma, and pain in Africa. Hematology. 2024; 2024(1):240-245.
39. Bulgin D, Tanabe P, Jenerette C. Stigma of sickle cell disease: a systematic review. Issues in mental health nursing. 2018; 39(8):675-686.
40. Obeagu EI, Obeagu GU. Addressing Myths and Stigmas: Breaking Barriers in Adolescent Sickle Cell Disease Education. Elite Journal of Health Science. 2024;2(2):7-15.
41. Burnes DP, Antle BJ, Williams CC, Cook L. Mothers raising children with sickle cell disease at the intersection of race, gender, and illness stigma. Health & Social Work. 2008; 33(3):211-220.
42. Obeagu EI, Obeagu GU. Management of diabetes mellitus patients with sickle cell anemia: Challenges and therapeutic approaches. Medicine. 2024; 103(17):e37941.
43. Obeagu EI, Obeagu GU, Egba SI. Coexisting conditions: addressing diabetes in sickle cell anemia care. Int J Curr Res Med Sci. 2023; 9:23-28.
44. Desine S, Eskin L, Bonham VL, Koehly LM. Social support networks of adults with sickle cell disease. Journal of Genetic Counseling. 2021; 30(5):1418-1427.
45. Sehlo MG, Kamfar HZ. Depression and quality of life in children with sickle cell disease: the effect of social support. BMC psychiatry. 2015; 15:1-8.
46. Hsu LL, Green NS, Ivy ED, Neunert CE, Smaldone A, Johnson S, Castillo S, Castillo A, Thompson T, Hampton K, Strouse JJ. Community health workers as support for sickle cell care. American journal of preventive medicine. 2016; 51(1):S87-98.
47. Matthie N, Jenerette C, McMillan S. Role of self-care in sickle cell disease. Pain Management Nursing. 2015; 16(3):257-266.
48. Noll RB, Vannatta K, Kalinyak KA, Swiecki E, Garstein M, Davies W, Bukowski WM. Parental distress, family conflict, and role of social support for caregivers with or without a child with sickle cell disease. Family Systems Medicine. 1994; 12(3):281.

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