Healthcare Concern: The High Rate of Diabetes in Southeastern Nigeria

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ABSTRACT

Diabetes mellitus is an escalating public health crisis globally, and its impact is profoundly felt in Southeastern Nigeria, where the prevalence of diabetes stands at approximately 24%, significantly higher than both national and global averages. This review examines the epidemiology, risk factors, health impacts, and management challenges associated with diabetes in this region. Key contributors to the high diabetes rates in Southeastern Nigeria include genetic predispositions, rapid urbanization, lifestyle changes, and socioeconomic disparities. The health implications of diabetes are severe, encompassing complications such as neuropathy, nephropathy, and cardiovascular disease, which lead to a diminished quality of life and increased mortality. Challenges in managing diabetes are compounded by inadequate healthcare infrastructure, limited access to specialized care, and cultural factors influencing treatment adherence. Effective strategies for diabetes management in Southeastern Nigeria require comprehensive public health interventions, enhanced healthcare infrastructure, and culturally tailored educational programs. Future research should focus on filling gaps in epidemiological data, understanding rural healthcare barriers, and evaluating the effectiveness of targeted interventions. A collaborative approach involving government, healthcare providers, and communities is crucial for mitigating the diabetes burden and improving health outcomes in the region.

Keywords: Diabetes mellitus, Southeastern Nigeria, epidemiology, risk factors, healthcare challenges, public health interventions.

INTRODUCTION

Diabetes is a major global public health issue, with over 537 million adults worldwide living with the disease as of 2021, and this number is projected to increase significantly by 2045. The disease contributes to various complications, including cardiovascular diseases, kidney failure, and neuropathy, leading to high morbidity and mortality rates [1]. Diabetes was once primarily affecting high-income countries, but its burden is increasingly shifting to low- and middle-income countries (LMICs), where healthcare systems are often ill-equipped to manage the rising numbers of affected individuals. LMICs now account for 80% of global diabetes-related deaths, underscoring the need for comprehensive public health interventions. Southeastern Nigeria, a region with rich demographic diversity, has witnessed a growing burden of diabetes in recent years due to rapid urbanization, economic changes, and shifts in dietary habits [2]. The region is home to various ethnic groups, including the Igbo people, who face unique sociocultural factors that influence healthcare access and health behaviors. Limited healthcare infrastructure and a lack of awareness and education regarding diabetes prevention and management exacerbate the situation. The aim of this review is to provide a comprehensive analysis of diabetes in Southeastern Nigeria, focusing on its prevalence, risk factors, and impact [3]. The review aims to contribute to a deeper understanding of the diabetes epidemic in Southeastern Nigeria and offer insights for policymakers, healthcare professionals, and public health advocates on how to mitigate the rising burden of this disease.

Epidemiology of Diabetes in Southeastern Nigeria

Diabetes is a significant public health challenge in Southeastern Nigeria, with an estimated 24% of the population affected by the condition. This statistic is higher than the national average and indicates a growing health crisis in the region [4]. The prevalence of diabetes in this region reflects a complex interplay of factors, including genetic

predisposition, rapid urbanization, changing dietary patterns, and increased sedentary lifestyles. Diabetes affects a broad cross-section of the population, but certain demographic groups are disproportionately impacted [5]. Age increases the prevalence of diabetes, particularly among individuals aged 45 and above. Gender disparity exists, with women exhibiting higher rates than men due to hormonal changes during pregnancy, higher obesity rates among women, and differing health-seeking behaviors [6]. Cultural and economic factors may also limit women's access to healthcare services, exacerbating their risk of developing diabetes. Urban vs. rural populations have significantly higher diabetes prevalence over the past two decades [7]. Urban populations are more likely to be exposed to risk factors such as poor dietary habits, sedentary lifestyles, and limited physical activity. Rural communities often have less access to healthcare services, making early diagnosis and management more challenging. Southeastern Nigeria's diabetes prevalence of 24% is significantly higher than the national average of around 9-11%, but it also stands out compared to global statistics [8]. The high prevalence in Southeastern Nigeria is a reflection of the region's unique demographic and socio-economic factors, as well as broader global trends of rising diabetes rates in low- and middle-income countries (LMICs). On the global scale, the prevalence of diabetes in Southeastern Nigeria mirrors trends seen in other LMICs, where urbanization, economic development, and changing lifestyles are contributing to the growing burden of NCDs [9]. As the region continues to urbanize and adapt to modern lifestyle changes, the burden of diabetes is likely to grow unless targeted interventions are implemented to address the underlying causes and improve health outcomes [10].

Risk Factors Contributing to High Diabetes Rates

The increasing prevalence of diabetes in Southeastern Nigeria is attributed to various interconnected risk factors, including genetic predispositions, urbanization, lifestyle changes, obesity, dietary shifts, and socioeconomic conditions [11]. Genetic predisposition is particularly prevalent among people of African descent, particularly in sub-Saharan Africa, who are more susceptible to Type 2 diabetes due to insulin resistance and glucose metabolism [12]. Urbanization has also led to lifestyle changes, such as a more sedentary lifestyle and increased consumption of processed foods. Obesity is a major risk factor for diabetes, particularly in urban areas where access to unhealthy, calorie-dense foods is higher. Traditional diets in Southeastern Nigeria have been replaced by modern dietary shifts, which include high intake of processed foods, sugary drinks, refined carbohydrates, and unhealthy fats [13]. Socioeconomic factors, such as lower income levels, limited education, and inadequate access to healthcare, are also associated with increased risk of diabetes and poor health outcomes [14]. Individuals with lower incomes often have less access to nutritious food and are more likely to consume inexpensive, energy-dense foods that are high in fat and sugar [15]. Comorbidities such as hypertension and cardiovascular disease significantly increase the risk of diabetes in Southeastern Nigeria. Hypertension is a prevalent condition in the region and is closely linked to diabetes, increasing the risk of cardiovascular events, heart attacks, strokes, kidney disease, eye damage, and cardiovascular disease [16]. The presence of both diabetes and heart disease accelerates the deterioration of health, leading to a higher mortality rate in the region. Addressing these risk factors will require targeted interventions aimed at promoting healthier lifestyles, improving access to healthcare, and increasing public awareness of diabetes prevention and management strategies [17].

Health Impacts of Diabetes

Diabetes has significant health impacts that affect individuals' quality of life, economic wellbeing, and future generations [18]. Hyperglycemia, a hallmark of diabetes, can lead to acute complications such as diabetic ketoacidosis and hyperosmolar hyperglycemic state. Chronic hyperglycemia damages blood vessels and organs, leading to microvascular and macrovascular complications [19]. Diabetic-related complications include neuropathy, nephropathy, retinal retinopathy, and cardiovascular disease. Neuropathy results in nerve damage, leading to loss of sensation, chronic pain, and increased risk of foot ulcers and amputations [20]. Nephropathy is a leading cause of kidney failure, while retinal retinopathy causes blindness globally. Cardiovascular disease is a significantly higher risk for people with diabetes, contributing to a shorter life expectancy [21]. Living with diabetes requires constant management of blood sugar levels, medication adherence, dietary changes, and regular monitoring, which can lead to stress, anxiety, and depression. Diabetes-related complications like vision loss, chronic pain, and mobility issues due to neuropathy further diminish the quality of life. Life expectancy can be reduced by up to 10 years for individuals with type 2 diabetes [22]. The economic burden of diabetes on individuals, families, and the healthcare system includes direct costs for medications, glucose monitoring devices, regular doctor visits, and managing complications. Indirect costs stem from loss of productivity due to disability, absenteeism, and early mortality. The healthcare system places a significant strain on low- and middle-income countries where access to diabetes care is often limited [23]. The intergenerational impact of diabetes on children's health outcomes and future risk is also significant. Genetic risk, maternal diabetes, and behavioral patterns significantly influence children's health behaviors. Effective prevention, early detection, and comprehensive management strategies are crucial to reduce diabetes's burden across individuals and society [24].

Challenges in Diabetes Management in Southeastern Nigeria

Diabetes management in Southeastern Nigeria is a complex issue influenced by the region's healthcare infrastructure, socioeconomic disparities, and cultural dynamics. The healthcare system is a mix of public and private facilities, with many individuals relying on public hospitals, clinics, and health centers [25]. However, public healthcare is often underfunded, inadequately staffed, and lacks essential medical equipment, especially in rural areas. The lack of specialized diabetes care centers and widespread screening programs results in many cases going undiagnosed or diagnosed late. Access to healthcare is also limited due to geographical disparities, socioeconomic barriers, and supply chain problems [26]. Insulin and oral medications are often in short supply, leading to suboptimal management and poor glycemic control. Healthcare providers in Southeastern Nigeria lack specialized training in diabetes management, leading to misdiagnosis and late diagnosis. Workload and burnout on healthcare workers are immense, particularly in public hospitals. Cultural beliefs and traditional health practices can interfere with modern diabetes management, leading to delayed treatment and increased risk of complications. Low health literacy is a major challenge in diabetes management, as patients struggle to understand the nature of diabetes, the importance of regular medication, and how to manage their condition with diet and lifestyle changes. Lastly, social stigma and misconceptions about diabetes can lead to delays in seeking proper medical treatment and contribute to poor disease management. Addressing these issues requires a coordinated effort to improve access to healthcare, enhance healthcare worker training, make medications more affordable, and provide education and support systems for patients and their families.

Socioeconomic and Cultural Influences on Diabetes Outcomes

Diabetes outcomes are significantly influenced by socioeconomic factors and cultural contexts, which can affect how the disease is understood, treated, and managed. Lower socioeconomic status (SES) is associated with a higher prevalence of diabetes due to increased exposure to risk factors such as poor diet, limited healthcare access, and lack of physical activity [27]. Individuals with higher SES tend to have better access to healthcare services, including preventive care, early diagnosis, and regular monitoring, which are critical in managing diabetes and preventing complications.

Cultural practices and beliefs related to health, diet, and the use of traditional medicine also impact diabetes outcomes. High-carbohydrate diets, high-fat foods, and strong beliefs in traditional medicine and herbal remedies can hinder effective management. Cultural beliefs about illness and its causes also impact diabetes outcomes. Family and community support can either support or hinder diabetes care [8]. Gender roles and expectations can also influence diabetes care, particularly for women. Caregiving responsibilities, access to healthcare, and social expectations can interfere with diabetes management. Women may face stigma or be seen as weak if they openly discuss or seek help for their condition, further complicating disease management. Religious healing practices, fasting, and fatalistic attitudes can also complicate diabetes management. Socioeconomic and cultural influences on diabetes outcomes are deeply intertwined and affect every aspect of disease management, from access to care and medication to the ability to adopt necessary lifestyle changes. Addressing these challenges requires culturally sensitive interventions, public health education, and community involvement to improve awareness, reduce stigma, and promote effective diabetes management in diverse socioeconomic and cultural settings [19]. Holistic care that integrates medical treatment with respect for cultural beliefs and practices is crucial for improving diabetes outcomes, particularly in regions where these influences are most pronounced.

Strategies for Improving Diabetes Prevention and Management

Public health interventions play a crucial role in diabetes prevention and management by raising awareness about risk factors, symptoms, and early detection. These interventions, such as campaigns promoting healthy lifestyles, can significantly reduce the incidence of diabetes, especially in populations at risk for type 2 diabetes. Community-based programs are instrumental in addressing diabetes at a grassroots level, providing education, emotional support, and assistance with diabetes self-management [28]. Engaging local leaders and addressing cultural barriers to diabetes care can help reduce stigma. Strengthening healthcare infrastructure is essential for effective diabetes prevention and management. Access to clinics, health centers, and diagnostic services is critical in addressing gaps in healthcare systems. Diagnostic services, treatment accessibility, and continuous training for healthcare workers are essential for providing high-quality care. Technology in diabetes management includes telemedicine, mobile health apps, and data tracking. Telemedicine platforms enable regular follow-ups and remote monitoring of blood glucose levels, improving patient outcomes through continuous care. Mobile health apps allow patients to track their blood glucose levels, food intake, exercise, and medications in real time, improving adherence and empowering patients to manage their condition more independently. Advancements in data tracking and artificial intelligence can help healthcare providers identify patterns in blood sugar levels and other health metrics. Diabetes management is a complex issue that requires a multifaceted approach. Technology, such

as continuous glucose monitors and insulin pumps, can help optimize insulin delivery and maintain stable glucose levels. Remote support allows patients to connect with healthcare professionals and support groups, facilitating ongoing education and problem-solving. Healthcare policy changes, such as expanding insurance coverage, reducing medication costs, and incentivizing preventive care, are also crucial. Addressing social determinants of health, such as access to nutritious food and physical activity, is also essential. Integrating traditional and modern healthcare practices in diabetes care is also crucial. Collaborations between healthcare providers and traditional healers can improve trust in the healthcare system and encourage early diagnosis and treatment [2]. Culturally tailored education can improve engagement and adherence to treatment plans. Addressing misinformation and promoting accurate understanding of the disease are also essential. A multi-faceted strategy that includes raising awareness, improving healthcare accessibility, and addressing socioeconomic and cultural influences is essential for reducing the global burden of diabetes.

Research Gaps and Future Directions

The research on diabetes in Southeastern Nigeria is limited, particularly in rural areas, due to a significant gap in epidemiological data. This lack of research often focuses on urban populations, leaving rural communities underrepresented. Barriers to healthcare access in rural areas, such as transportation difficulties, lack of facilities, and financial constraints, are also not well understood. Cultural and social influences on diabetes management are also scarce, making it difficult to design culturally sensitive interventions [28]. Longitudinal studies are needed to track diabetes trends and outcomes over time, assessing the effectiveness of interventions aimed at controlling blood sugar levels, promoting lifestyle changes, and preventing complications. Understanding the impact of socioeconomic changes on diabetes prevalence and outcomes is crucial, as Nigeria experiences economic development and lifestyle changes that may increase the risk of non-communicable diseases like diabetes. Research on the effectiveness of different intervention strategies in the Nigerian context is essential for improving diabetes management. Culturally appropriate interventions, community-based approaches, technology and innovation, and cost-effectiveness of treatment options should be studied. Collaboration between government, healthcare providers, and communities is essential for addressing diabetes. Government involvement, collaboration between healthcare providers, community engagement, and public-private partnerships can enhance access to medications, provide funding for public health programs, and support diabetes education in underserved regions. Future research should investigate genetic factors contributing to diabetes in Southeastern Nigeria, prioritize culturally appropriate interventions, explore behavioral studies, explore innovative solutions, and evaluate healthcare policies related to diabetes care in Southeastern Nigeria. This comprehensive research agenda will help fill key gaps in understanding the prevalence, causes, and management of diabetes in the region [20].

CONCLUSION

Diabetes presents a formidable public health challenge in Southeastern Nigeria, with an alarmingly high prevalence of approximately 24% in the population. This review has highlighted the intricate factors contributing to this burgeoning crisis, including genetic predispositions, urbanization, lifestyle changes, and socioeconomic disparities. The complex interplay of these elements underscores the need for a multifaceted approach to address the diabetes epidemic effectively. The health impacts of diabetes are profound, leading to a range of serious complications and significantly affecting individuals' quality of life. The burden of diabetes extends beyond the individual, placing substantial strain on families, communities, and the healthcare system. Addressing the challenges of diabetes management requires a concerted effort to enhance healthcare infrastructure, improve access to medications and specialized care, and promote education and awareness about the disease. Cultural practices and socioeconomic factors play a critical role in shaping diabetes outcomes. Traditional beliefs, dietary practices, and varying levels of access to healthcare contribute to the complexities of managing diabetes in Southeastern Nigeria. Integrating culturally sensitive approaches into diabetes care is essential for improving adherence to treatment and achieving better health outcomes.

The review has also identified key research gaps that need to be addressed to enhance understanding and management of diabetes in the region. There is a critical need for more research focused on rural areas, longitudinal studies to track diabetes trends, and evaluations of different intervention strategies. Collaboration between government agencies, healthcare providers, and communities is vital for developing and implementing effective diabetes management strategies. Future research should prioritize exploring genetic factors contributing to diabetes, developing culturally appropriate interventions, and investigating innovative solutions to improve diabetes care. Additionally, strengthening public-private partnerships and expanding healthcare policies related to diabetes will be crucial in addressing this growing health crisis.

In conclusion, tackling the diabetes epidemic in Southeastern Nigeria requires a holistic approach that combines improved healthcare access, culturally sensitive interventions, community engagement, and robust research

initiatives. By addressing these areas, it is possible to mitigate the impact of diabetes and promote better health outcomes for individuals and communities in the region.

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