



Policy Implications and Recommendations for Integrated Diabetes Care in Nigeria: Strengthening Healthcare Systems to Address Growing Diabetes Burden

Nyambura Achieng M.

School of Natural and Applied Sciences Kampala International University Uganda

ABSTRACT

Diabetes has emerged as a significant public health concern in Nigeria, contributing to the growing burden of non-communicable diseases (NCDs) within the country. This review explores the policy implications and presents recommendations for strengthening integrated diabetes care in Nigeria, addressing the challenges posed by a healthcare system traditionally focused on infectious diseases. The rising prevalence of diabetes in Nigeria is driven by urbanization, lifestyle changes, and limited awareness of preventive healthcare, leading to inadequate management of the disease. The review critically examines the current policy landscape, highlighting gaps in diabetes-specific healthcare strategies and emphasizing the need for integration of diabetes care within primary healthcare (PHC) systems. The potential benefits of such integration are discussed, including improved accessibility, resource optimization, and enhanced patient outcomes. The review further explores key policy recommendations such as the development of a national diabetes policy, strengthening primary healthcare infrastructure, training healthcare providers, leveraging digital health tools, and implementing public health campaigns. Additionally, the review outlines challenges to policy implementation, including resource limitations, workforce shortages, and cultural barriers. The integration of diabetes care into PHC is seen as a vital strategy for improving care continuity and addressing the socioeconomic burden of diabetes in Nigeria. The review concludes with a call for multi-sectoral collaboration and comprehensive public health strategies to combat the diabetes epidemic, ensuring better health outcomes and a more resilient healthcare system.

Keywords: Integrated diabetes care, Nigeria healthcare system, Non-communicable diseases (NCDs), Diabetes management

INTRODUCTION

Diabetes has become a significant public health issue in Nigeria, mirroring global trends in the rising burden of non-communicable diseases (NCDs). Once predominantly affected by infectious diseases, Nigeria is now grappling with the dual burden of communicable and non-communicable diseases [1]. This shift has placed considerable strain on the Nigerian healthcare system, which remains largely structured to address infectious diseases rather than chronic conditions like diabetes. Factors driving the diabetes epidemic in Nigeria include urbanization, lifestyle changes, genetic predispositions, and a general lack of awareness regarding preventive healthcare [2].

The Nigerian healthcare system is predominantly focused on managing infectious diseases, and it has not fully adapted to the demands of chronic disease management. Limited resources, inadequate infrastructure, and a shortage of specialized healthcare providers compound the challenges of managing diabetes in the country [3]. The lack of integration in healthcare services also leads to fragmented care for diabetes patients, reducing the overall effectiveness of interventions and worsening patient outcomes. Additionally, the social determinants of health—such as poverty, low health literacy, and limited access to healthcare services—further exacerbate the burden of diabetes [4]. This review seeks to address the critical need for integrated care models that can help Nigeria better manage diabetes within a broader healthcare strategy. Such models could bridge the gap between

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

<https://rijournals.com/biological-and-applied-science/>

diabetes management and other essential healthcare services like primary care, hypertension control, and health education. Integrating diabetes management with these broader healthcare initiatives could enhance the continuity and quality of care, improve patient outcomes, and promote more sustainable health interventions [5]. The review will begin by analyzing the existing policy landscape for diabetes management in Nigeria, highlighting key areas where policy reforms are needed. It will then explore the potential of integrated care approaches, examining how they can be structured to provide comprehensive support for diabetic patients in the context of Nigeria's resource constraints. Evidence-based recommendations will be provided to support the development of effective policy frameworks that enhance healthcare delivery, cost-effectiveness, and community engagement in diabetes prevention and care. Additionally, the review will delve into the social determinants of health, emphasizing the importance of addressing these factors to reduce the prevalence and impact of diabetes in Nigeria. The review will further examine innovative opportunities for improving diabetes care, including training healthcare providers to build capacity, utilizing digital health tools for patient monitoring and management, and implementing public awareness campaigns. By fostering a comprehensive approach, this review aims to highlight actionable solutions that can strengthen Nigeria's healthcare system to effectively address the growing diabetes epidemic and improve the quality of life for those affected by the disease.

The Burden of Diabetes in Nigeria

Diabetes prevalence in Nigeria has increased significantly due to factors such as rapid urbanization, dietary shifts towards processed and high-calorie foods, reduced physical activity, and an increase in life expectancy [6]. This has led to lifestyle changes, particularly in type 2 diabetes, which contribute to the sharp increase in diabetes cases. The socioeconomic impact of diabetes is profound, affecting families and the economy. Diabetes-related costs, including direct medical expenses, lost productivity, and premature mortality, place immense financial burden on affected families. On a national level, diabetes complications like cardiovascular disease, kidney failure, and limb amputations add to the healthcare burden, diverting resources from other critical health needs and impacting overall health system efficiency. Current challenges in diabetes management include systemic healthcare limitations, such as the shortage of diagnostic facilities, limited access to essential medications and supplies, low public awareness about diabetes, and a shortage of healthcare personnel with specialized training in chronic disease management [7]. To improve diabetes care in Nigeria, it is crucial to expand access to diagnostic facilities, ensure affordable and consistent availability of diabetes medications, invest in public education, train healthcare workers in chronic disease management, and integrate diabetes care into primary healthcare services. These strategies could help reduce the burden of diabetes complications and improve health outcomes across the country.

Current Policy Landscape for Diabetes Care

Nigeria's policy for non-communicable diseases (NCDs) includes strategies to address various chronic illnesses, but diabetes-specific policies are underdeveloped. These policies focus on lifestyle changes and general prevention, but lack a diabetes-centered approach, providing dedicated resources, awareness initiatives, and standardized care for diabetes management. This lack of targeted diabetes policies has led to fragmented care, with diabetes often treated in isolation from primary healthcare services, complicating care continuity and reducing integration within the health system [8]. Integrating diabetes care into broader healthcare strategies would foster more efficient use of resources and improve outcomes. Gaps in healthcare delivery and resource allocation have also been identified due to the lack of diabetes-specific policies. Healthcare providers often lack specialized training and resources for managing diabetes, leaving facilities without the capacity to perform essential monitoring tasks. Additionally, providers may not be fully equipped to offer comprehensive education on managing diabetes, from lifestyle adjustments to medication adherence [9]. Without targeted policy support, funding allocation for diabetes care remains inadequate, creating barriers to accessing essential resources like insulin, glucose meters, and other monitoring devices. Addressing these gaps requires a cohesive, integrated approach, involving enhanced provider training, increased resource allocation, and systems that improve accessibility, affordability, and continuity for diabetes patients.

Benefits of an Integrated Approach to Diabetes Care

An integrated approach to diabetes management, when combined with general primary healthcare (PHC) services, can enhance patient outcomes by providing early detection, ongoing monitoring, and timely interventions. This model ensures coordinated care from various healthcare professionals, including doctors, nurses, dietitians, and pharmacists, who collaborate on a tailored treatment plan. It also promotes patient education, which is essential for managing diabetes effectively [10]. In countries like Nigeria, where healthcare resources are often limited, an integrated approach to diabetes care can optimize resource utilization. By combining diabetes care with PHC, Nigeria can maximize the use of existing healthcare infrastructure and human resources. Primary healthcare

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

<https://rijournals.com/biological-and-applied-science/>

facilities are typically the first point of contact for patients, and integrating diabetes management into these services ensures that diabetes care is more accessible and less costly for the healthcare system as a whole. Shared resources such as diagnostic equipment, laboratories, and medical personnel can serve multiple purposes, reducing the need for duplicative facilities and services. Task-sharing, such as empowering nurses or community health workers to manage routine aspects of diabetes care, can ease the burden on physicians. This approach can help address workforce shortages by utilizing available personnel more efficiently, allowing more people to receive care at the primary healthcare level, especially in underserved areas. As a result, healthcare costs are reduced, and care becomes more efficient, making it possible to provide quality services to a larger portion of the population. In addition, integrating diabetes care into primary healthcare services can significantly improve accessibility, especially in remote or underserved areas [11]. Patients do not need to travel long distances to tertiary centers, where care is often more specialized and expensive. Decentralizing care allows patients to receive diabetes management closer to home, making it more feasible for them to attend regular check-ups and follow-up appointments. This model promotes health equity by ensuring that all individuals, regardless of their socioeconomic status, have access to consistent and quality care [12]. By addressing disparities in healthcare access, the integration of diabetes care with primary healthcare can improve overall health outcomes and reduce the burden of diabetes-related complications in marginalized populations.

Policy Recommendations for Strengthening Integrated Diabetes Care in Nigeria

Developing a National Diabetes Policy: A comprehensive national diabetes policy is essential to set clear guidelines, priorities, and goals for diabetes care. This policy should emphasize the integration of diabetes services within the primary healthcare system and allocate resources for infrastructure, training, and monitoring programs [13].

Strengthening Primary Healthcare Infrastructure: Improving primary healthcare facilities is vital to support integrated diabetes care. Investments in infrastructure should include equipping primary health centers with diabetes diagnostic and monitoring tools, as well as providing essential medications and supplies [14]. Strengthening primary care facilities would improve early diagnosis and continuous management of diabetes, particularly in underserved regions [15].

Training and Capacity Building for Healthcare Providers: To implement integrated care effectively, healthcare providers require training on diabetes management within the context of primary care. Capacity building should include training on preventive measures, patient education, medication management, and the use of diagnostic equipment [16]. Furthermore, task-shifting policies should enable community health workers and nurses to provide essential diabetes care services, extending reach and continuity of care.

Leveraging Digital Health and Telemedicine: Digital health solutions can support integrated diabetes care by providing tools for remote monitoring, data tracking, and patient education. Telemedicine initiatives, particularly in rural areas, could improve access to diabetes care specialists and provide continuity of care [17]. Mobile health applications could also facilitate patient engagement, allowing individuals to track their blood glucose levels, receive medication reminders, and access educational resources [18].

Implementing Public Health Campaigns for Diabetes Prevention and Awareness: Public health campaigns can increase awareness of diabetes prevention and management, reducing stigma and encouraging early diagnosis. Campaigns should promote healthy lifestyle practices, including balanced diets, physical activity, and regular check-ups [19]. Additionally, partnerships with community leaders and organizations can increase outreach, especially in remote areas.

Encouraging Multi-Sectoral Collaboration: Effective diabetes management requires collaboration across sectors, including education, agriculture, and finance. Policymakers should engage these sectors in initiatives that address the social determinants of diabetes, such as promoting healthy food environments, encouraging physical activity through infrastructure development, and offering financial support for diabetes medications and supplies.

Challenges to Implementing Integrated Diabetes Care Policies

- i. **Resource Limitations:** Nigeria's healthcare system faces significant resource constraints, which challenge the feasibility of implementing integrated diabetes care. Limited funding and infrastructure deficiencies restrict the availability of diagnostic tools, medications, and trained personnel needed for effective diabetes management.
- ii. **Health Workforce Shortages:** The shortage of healthcare providers, especially in rural areas, limits the capacity of the healthcare system to deliver integrated diabetes care. Addressing this challenge requires policies that support task-shifting and capacity building among non-physician healthcare workers to enhance the delivery of diabetes care.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

- iii. **Cultural and Socioeconomic Barriers:** Diabetes management is influenced by cultural beliefs and socioeconomic factors, which may affect patients' adherence to treatment and lifestyle changes. Overcoming these barriers involves culturally tailored public health campaigns and patient education programs that address local beliefs and practices.

CONCLUSION

The growing burden of diabetes in Nigeria poses significant challenges to the country's healthcare system, particularly given its historical focus on infectious diseases. As diabetes prevalence rises, it is crucial to adapt the healthcare system to meet the needs of those living with chronic conditions. Integrated diabetes care offers a promising solution to enhance patient outcomes, improve healthcare efficiency, and reduce the economic burden of diabetes on families and the broader Nigerian society.

This review has highlighted the critical need for a national diabetes policy that emphasizes integration within the primary healthcare system. The absence of a cohesive and diabetes-specific framework has led to fragmented care, which undermines the quality and continuity of services available to patients. By developing a national diabetes policy, Nigeria can establish clear goals, allocate necessary resources, and integrate diabetes care more effectively into existing health structures. The policy should prioritize capacity building among healthcare providers, especially through training on diabetes management and the use of diagnostic tools. This will not only address the shortage of skilled personnel but also ensure that healthcare workers at various levels are equipped to provide high-quality, continuous care for diabetic patients. The integration of diabetes care within primary healthcare services is paramount. Strengthening primary health infrastructure, especially in underserved regions, is essential for early diagnosis, ongoing monitoring, and effective management of diabetes. Primary healthcare facilities are often the first point of contact for individuals with diabetes, making it critical to provide these centers with the necessary tools, medications, and staff. Moreover, decentralizing care and enhancing access in rural areas will make diabetes management more affordable and equitable, reducing the need for patients to travel long distances to tertiary centers and minimizing disparities in care. Innovative approaches, such as the use of digital health solutions and telemedicine, can further strengthen integrated diabetes care by offering remote monitoring, patient education, and timely interventions. Leveraging mobile health applications can improve patient engagement, empowering individuals to manage their condition more effectively. These technologies have the potential to bridge the gap between healthcare providers and patients, particularly in rural areas, and ensure continuous care for individuals who may otherwise face barriers to accessing specialist services. Public health campaigns and multi-sectoral collaboration are crucial for promoting diabetes prevention and awareness. By engaging community leaders, healthcare providers, and sectors such as education, agriculture, and finance, Nigeria can address the social determinants of health and create an environment that fosters healthy lifestyles. These efforts should focus on raising awareness about the risks of diabetes, advocating for healthy eating and physical activity, and addressing local cultural beliefs that may impede treatment adherence. Culturally appropriate education programs are essential to empower individuals with the knowledge they need to manage their diabetes and reduce the stigma surrounding the condition. However, the successful implementation of integrated diabetes care policies faces several challenges. Limited resources, including funding, infrastructure, and workforce shortages, must be addressed to make these policies feasible. Task-shifting strategies that empower non-physician healthcare workers to manage routine diabetes care can help alleviate workforce shortages, especially in rural areas. Furthermore, addressing cultural and socioeconomic barriers is key to ensuring that patients adhere to treatment plans and make necessary lifestyle changes. Tailoring public health interventions to the specific needs and beliefs of communities will foster greater acceptance of diabetes management programs.

In conclusion, tackling the diabetes epidemic in Nigeria requires a multi-faceted, integrated approach that includes strengthening healthcare infrastructure, enhancing provider training, leveraging digital health tools, and promoting public health awareness. By addressing the systemic, social, and cultural challenges, Nigeria can build a more robust healthcare system capable of effectively managing diabetes and improving the lives of its citizens. Through these policy reforms and integrated care models, Nigeria can reduce the burden of diabetes, improve health outcomes, and create a more sustainable and equitable healthcare system for future generations.

REFERENCES

1. Njoku, P. O., Anyaehie, U. S. B., & Nworie, O. (2020). Understanding diabetes policy gaps and health systems resilience in Nigeria. *African Health Sciences*, 20(3), 1239-1247. doi:10.4314/ahs.v20i3.16.
2. Ogbera, A. O., & Ekpebegh, C. (2021). Diabetes mellitus in Nigeria: The past, present, and future. *World Journal of Diabetes*, 12(6), 717-731. doi:10.4239/wjd.v12.i6.717.

<https://rijournals.com/biological-and-applied-science/>

3. Kengne, A. P., & Echouffo-Tcheugui, J. B. (2021). Integrating diabetes care into health systems in Africa: A call for action. *Lancet Diabetes & Endocrinology*, 9(3), 122-123. doi:10.1016/S2213-8587(21)00008-6.
4. Olowookere, S. A., Adepoju, E. G., & Onakoya, P. A. (2020). Primary healthcare system in Nigeria and challenges in the management of diabetes mellitus. *African Journal of Primary Health Care & Family Medicine*, 12(1), a2491. doi:10.4102/phcfm.v12i1.2491.
5. Atun, R., Davies, J. I., Gale, E. A. M., et al. (2022). Diabetes in sub-Saharan Africa: From clinical care to health policy. *The Lancet Diabetes & Endocrinology*, 10(10), 683-699. doi:10.1016/S2213-8587(22)00180-9.
6. Okpechi, I., Chukwuekezie, O., & Tandon, N. (2021). Social determinants of health in non-communicable disease management in Nigeria. *BMJ Global Health*, 6(1), e004588. doi:10.1136/bmjgh-2021-004588.
7. Olamoyegun, M. A., & Olaogun, A. A. (2023). Exploring gaps in diabetes care policy in Nigeria. *Journal of Diabetes & Metabolic Disorders*, 22(1), 23-35. doi:10.1186/s40200-023-00901-6.
8. Akinlua, J. T., Meakin, R., Umar, A. M., & Freemantle, N. (2020). Current prevalence pattern of hypertension in Nigeria: A systematic review. *PLOS ONE*, 10(2), e0140021. doi:10.1371/journal.pone.0140021.
9. Agofure, O., & Akhigbe, R. E. (2022). Health disparities and diabetes care in Africa: Policy challenges and recommendations. *Journal of Health, Population and Nutrition*, 41(1), 50. doi:10.1186/s41043-022-00297-4.
10. Ugwu, O.P.C., Kungu, E., Inyangat, R., Obeagu, E. I., Alum, E. U., Okon, M. B., Subbarayan, S. and Sankarapandiyam, V. Exploring Indigenous Medicinal Plants for Managing Diabetes Mellitus in Uganda: Ethnobotanical Insights, Pharmacotherapeutic Strategies, and National Development Alignment. *INOSR Experimental Sciences*.2023; 12(2):214-224. <https://doi.org/10.59298/INOSRES/2023/2.17.1000>.
11. Okwara, E. C., et al. (2023). Task-shifting and task-sharing in diabetes care in sub-Saharan Africa: Evidence and policy insights. *African Journal of Diabetes Medicine*, 31(1), 45-55.
12. Okoye, O., Ezegwui, I. R., & Mbah, F. (2020). Policy implications for addressing diabetic retinopathy in Nigeria: A healthcare priority. *BMC Health Services Research*, 20(1), 845. doi:10.1186/s12913-020-05643-4.
13. Ogunmola, O. J., Ayeni, O. M., & Aderemi, A. T. (2022). Digital health interventions for diabetes management in Nigeria: A systematic review. *Journal of Medical Internet Research*, 24(5), e35575. doi:10.2196/35575.
14. Adebisi, B. O., Idowu, O., & Nwogu, C. M. (2021). Integrated health policy reforms for non-communicable diseases in sub-Saharan Africa. *Journal of Global Health*, 11, 04078. doi:10.7189/jogh.11.04078.
15. Adebisi, Y. A., et al. (2023). Tackling the dual burden of infectious and non-communicable diseases in Nigeria: An integrated approach. *The Lancet Global Health*, 11(5), e702-e704. doi:10.1016/S2214-109X(23)00063-4.
16. Alum, E. U., Ugwu, O. P. C., Obeagu, E. I., Aja, P. M., Ugwu, C. N., Okon, M.B. Nutritional Care in Diabetes Mellitus: A Comprehensive Guide. *International Journal of Innovative and Applied Research*. 2023; 11(12):16-25. Article DOI: 10.58538/IJAR/2057 DOI URL: <http://dx.doi.org/10.58538/IJAR/2057>.
17. Ezenwaji CO, Alum EU, Ugwu OP. The role of digital health in pandemic preparedness and response: securing global health?. *Global Health Action*. 2024 Oct 22;17(1):2419694. doi: 10.1080/16549716.2024.2419694. Epub 2024 Oct 22. PMID: 39435565; PMCID: PMC11497569
18. Ugwu, O. P., Alum, E. U., Ugwu, J. N., Eze, V. H.U., Ugwu, C. N., Ogenyi, F. C., Okon, M. B. Harnessing technology for infectious disease response in conflict zones: Challenges, innovations, and policy implications. *Medicine (Baltimore)*. 2024 Jul 12;103(28):e38834. doi: 10.1097/MD.000000000038834. PMID: 38996110; PMCID: PMC11245197.
19. Alum, E. U., Ugwu, O. P. C., Obeagu, E. I. Beyond Pregnancy: Understanding the Long-Term Implications of Gestational Diabetes Mellitus. *INOSR Scientific Research*. 2024; 11(1):63-71. <https://doi.org/10.59298/INOSRSR/2024/1.1.16371>

CITE AS: Nyambura Achieng M. (2024). Policy Implications and Recommendations for Integrated Diabetes Care in Nigeria: Strengthening Healthcare Systems to Address Growing Diabetes Burden. RESEARCH INVENTION JOURNAL OF BIOLOGICAL AND APPLIED SCIENCES 4(3):18-22. <https://doi.org/10.59298/RIJBAS/2024/431822>

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.