

Implications of the rising cost of insulin and other antihyperglycaemic drugs in the management of diabetes mellitus in Nigeria

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ABSTRACT:

Diabetes mellitus (DM) stands as a paramount public health issue within Nigeria, deeply compounded by escalating costs of insulin and other antihyperglycaemic medications. The price surge, influenced by factors such as inflation and reliance on imports, significantly impedes access to vital drugs for numerous individuals managing diabetes in Nigeria. The resultant financial strain on patients' insufficient healthcare infrastructure and subpar insurance coverage collectively precipitates deteriorated health outcomes and inflated healthcare expenditures. Non-adherence to prescribed medications due to prohibitive costs further amplifies complications and hospital admissions, thereby imposing significant pressure on both patients and the broader healthcare system. There is an imperative need for efficacious strategies encompassing drug price regulation, implementation of subsidies, encouragement of generic drug use, and enhancement of healthcare financing to address and alleviate these pervasive issues, ultimately fostering better diabetes management in Nigeria.

Keywords: Diabetes mellitus, Antihyperglycaemic drugs, Financial burden, Complications, Healthcare financing, Nigeria.

1. INTRODUCTION

Diabetes mellitus (DM), being a chronic metabolic ailment typified by heightened blood glucose levels, constitutes a notable public health issue worldwide, encompassing Nigeria. The hormone insulin is found in the beta cells of the pancreas and regulates glucose levels both fasting and after meals. In cases where the hormone insulin is either not produced in large quantities, or the body cannot effectively use the produced insulin; a disorder of glucose metabolism called diabetes

mellitus has occurred. ¹ The resulting high levels of glucose in the blood and the inadequate amount of glucose in the cells together produce the symptoms and complications of diabetes.^{1,2,3} As of January 2024, the population of Nigeria was 226.5 million indicating an increase of 5.3 million (2.4%) between early 2023 to the start of 2024.⁴ This large population means Nigeria has the largest population of DM patients in sub-Saharan Africa with over 3 million DM adult cases as of 2021.⁵ Within the context of Nigeria, management of this particular condition faces a plethora of challenges, which are further intensified due to various factors, such as limited access to healthcare services, economic constraints, and inadequate infrastructure.⁶ One crucial aspect of diabetes management is the use of antihyperglycaemic drugs, including insulin, which regulate blood sugar levels and prevent complications. In type 2 DM management, diet and exercise are first-line treatments along with oral antihyperglycaemic drugs to improve glycaemic control and prevent both microvascular and macrovascular complications.⁷ Thus, in the management of type 2 DM lifestyle modifications must be combined with oral pharmacologic agents in attaining optimal glycaemic control, particularly as type 2 diabetes mellitus progresses with continued loss of pancreatic beta-cell function and insulin production. The seven classes of oral antihyperglycaemic drugs are the Biguanides, Sulfonylureas, Meglitinides, Thiazolidinediones, α -glucosidase inhibitors, Incretin mimetics and Incretin enhancers drug.⁷

In recent years, especially since the year 2023, Nigeria has witnessed a steady rise in the cost of insulin and other antihyperglycaemic drugs, presenting substantial challenges to individuals, healthcare providers, and policymakers. This upward trend in drug prices has been influenced by various factors, including inflation which is the general increase in prices of goods and services, currency devaluation, a government monetary

policy of officially lowering the value of the Nigeria naira within a fixed exchange rate, import dependency on most pharmaceutical drugs, and pharmaceutical market dynamics.⁸ As a result, many people with DM in Nigeria face difficulties in accessing essential medications, leading to poor disease management, increased risk of complications, and a significant economic burden on individuals and the healthcare system. Lending its voice the Diabetes Association of Nigeria (DAN) this year 2024 petitioned the Coordinating Minister of Health and Social Welfare, on the rising cost of diabetes care in the country. The association said the price of insulin, a critical and lifesaving drug for diabetes patients, had risen by about 200 percent from N4,000 to N12,000. It further warned of a potentially catastrophic existential threat to the lives of over six million Nigerians living with diabetes due to the increase in the price of diabetes medications and supplies.⁸

Implications of the high cost of medications to Diabetes Management among Patients and the healthcare system

The implications of the rising cost of insulin and other antihyperglycaemic drugs for the management of diabetes mellitus in Nigeria are multifaceted and profound. Firstly, affordability barriers restrict access to adequate treatment for a considerable portion of the population, particularly those from low-income backgrounds.^{9,10} This disparity in access to care exacerbates health inequities between the rich and the poor and contributes to poorer health outcomes among disadvantaged communities. In Nigeria, the problem of affordability has been a long-standing issue for many years, which is due to only few percentages of the population having health insurance which could have long term impact on the management of DM.

Secondly, the financial burden imposed by high drug prices places strain on individuals and households already grappling with the economic challenges of living with a chronic illness.^{11,12} Many Nigerians with diabetes must allocate a substantial portion of their income to purchase medications, often at the expense of other essential needs such as food, housing, and education. This places financial strain on most patients because of the lack of insurance schemes to cater to these patients. The National Health Insurance Scheme which has been operational for more than two decades now, still does not cover most of the population except those in the formal sectors of the economy.^{13,14} The consequence is that most patients purchase these drugs themselves, thus increasing the out-of-pocket expenditure among patients.⁶ This financial strain not only compromises their quality of life but also undermines their ability to adhere

to prescribed treatment regimens, leading to suboptimal disease management and increased healthcare costs in the long term.^{15,16,17}

Furthermore, when medication costs are high, patients may skip doses or delay refills to stretch their supply. This non-adherence can result in poorly controlled blood sugar levels, increasing the risk of complications such as heart disease, kidney damage, and nerve damage.^{18,19} Over time, this worsens the overall health outcomes for individuals with diabetes. In Nigeria, this has resulted in increased hospital admissions, morbidity, and mortality among DM patients.^{2,3,20} In addition, advances in diabetes management have introduced newer medications and technologies that offer better control and fewer side effects. However, these innovations are often more expensive and may not be accessible to all patients due to cost constraints.^{21,22} This disparity in access means that some patients may not benefit from the latest advancements in treatment.

Also, the stress of managing a chronic condition like diabetes is compounded by financial worries about affording medications. This stress can negatively impact mental health, contributing to anxiety and depression, which in turn can further undermine a patient's ability to manage their diabetes effectively.^{23,24} Besides, when individuals with diabetes are unable to afford or access their medications, it not only affects their health but also places a burden on the broader healthcare system. Poorly managed diabetes leads to more frequent hospital admissions, emergency room visits, and complications, increasing overall healthcare costs.¹⁸ Moreover, the rising cost of insulin and antihyperglycaemic drugs has significant implications for healthcare providers and the broader healthcare system in Nigeria. Clinicians are faced with the ethical dilemma of balancing optimal patient care with the financial constraints of their patients, often resorting to less effective or substantiated treatment options due to cost considerations.^{25,26} Additionally, health facilities may experience shortages of essential medications, further compromising the quality of diabetes care and placing additional strain on already overburdened healthcare infrastructure.²⁷ Furthermore, when patients cannot afford medications and experience complications, they often require more frequent visits to healthcare facilities, emergency care, or hospital admissions. This increases healthcare expenditure both for individuals and for the healthcare system as a whole.²⁸

Nigerian healthcare facilities already face challenges in terms of infrastructure, staffing, and resources. The added burden of managing

complications from diabetes due to medication non-adherence or unaffordability further strains the healthcare system.²⁹ Also, uncontrolled diabetes affects individuals' ability to work and their overall productivity. This has broader economic implications, as it affects workforce productivity and adds to the burden of disability and premature mortality.^{30,31} High medication costs underscore the need for effective healthcare policies that ensure access to affordable medications for chronic conditions like diabetes.³² However, policy implementation and access to generic medications can be challenging in Nigeria's healthcare landscape.³³

The way forward

Addressing the high cost of diabetes drugs in Nigeria requires a multi-faceted approach that considers both short-term interventions and long-term strategies.

- 1. Policy Change:** The government should implement price controls or negotiate lower prices with pharmaceutical companies thereby making the drugs more affordable. Also, the government can provide subsidies or grants to manufacturers to lower production costs or directly subsidising the cost of drugs for patients and consider lowering tariffs on imported diabetes drugs to reduce costs.
- 2. Promotion of Generic Drugs:** The government through the Ministry of Health and National Association of Food and Drug Regulatory Control should encourage the use of generic versions of diabetes medications, which are usually cheaper than branded counterparts and strengthen the regulatory frameworks to ensure the quality and efficacy of generic drugs.
- 3. Improving Healthcare Financing:** The Nigerian government should expand the health insurance coverage to include diabetes medications and ensure that insurance schemes cover a wide range of diabetes drugs and treatments.
- 4. Public-Private Partnerships (PPP):** The Nigerian government should consider collaborating with private sector stakeholders to reduce costs through joint initiatives and encouraging pharmaceutical companies to invest in local production of diabetes drugs, which can lower costs due to reduced import dependence.
- 5. Health Education and Prevention:** The government should leverage on the domains

of the National Health Promotion Policy in investing in public health campaigns to raise awareness about diabetes prevention and management and promoting healthy lifestyles and early detection to reduce the overall burden of diabetes and related healthcare costs.

- 6. Research and Development:** The government should invest in local research and development through associations like the DAN and other pharmaceutical and non-pharmaceutical research organisations to develop new, affordable diabetes treatments. In addition, supporting partnerships between local researchers and international institutions such as the International Diabetes Federation for knowledge transfer and capacity building could be beneficial to researchers in Nigeria.
- 7. Monitoring and Evaluation:** The Nigerian government should establish monitoring and evaluation mechanisms to monitor drug pricing and availability regularly and also conduct periodic reviews to assess the impact of interventions and adjust strategies accordingly.
- 8. Community Engagement:** Any policy by the government should involve patient advocacy groups and community organisations in discussions on drug pricing and access. Also, gathering feedback from patients and healthcare providers to inform policy decisions and improve implementation should be a regular and continuous exercise.

2. Conclusion

In conclusion, the rising cost of insulin and other antihyperglycaemic drugs in Nigeria presents profound challenges to the management of diabetes mellitus. It imposes significant barriers to treatment access, exacerbates health inequities, strains household finances, and contributes to poor health outcomes and increased healthcare costs. Addressing these challenges requires urgent policy interventions to ensure affordability, enhance healthcare financing mechanisms, and promote access to essential medications, thereby improving diabetes care and reducing the burden on individuals and the healthcare system alike.

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OA wrote the entire manuscript from conception to reviewing and editing.

Conflicts of interest

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Data availability

Not Applicable

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