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The Rising Burden of Diabetes in Jamaica: Challenges and Implications

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ABSTRACT

Diabetes mellitus represents a growing public health challenge in Jamaica, contributing to increased morbidity, mortality, and strain on the healthcare system. This study analyses longitudinal secondary data from national surveys, hospital records, and the International Diabetes Federation spanning 1995–2024 to evaluate trends in prevalence, demographic disparities, and healthcare access. Findings indicate that diabetes prevalence rose from approximately 7.9% in 2007 to 12.5% in 2024 among adults aged 20–79, with higher rates among women and urban populations. Contributing factors include ageing, rising obesity, nutritional transitions, and limited access to healthcare services. Comparative analysis shows Jamaica's prevalence exceeds that of Sub-Saharan Africa and Western Europe but remains slightly below North American rates. Despite policy efforts, awareness, treatment, and glycaemic control remain suboptimal. The study underscores the need for integrated prevention strategies, community-based interventions, and strengthened surveillance systems to curb the growing diabetes burden in Jamaica.

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Introduction

Diabetes mellitus is a significant public health challenge in Jamaica, contributing to high morbidity and mortality, and placing considerable demand on healthcare resources [1]. Historical data show prevalence rising from approximately 1.3% in 1960 to 17.9% in 1995 in adults, reflecting epidemiological and lifestyle transitions [2]. Recent estimates indicate that 12.5% of adults aged 20–79 live with diabetes, equating to about 235,600 cases nationally [3]. Dysglycaemia, including diabetes and impaired fasting glucose, increases with age, with adults 75 and older showing prevalence above 40% [4]. Women are disproportionately affected due to higher rates of obesity and central adiposity, a trend observed in several Caribbean countries [4,5]. Jamaica faces unique structural barriers to care, including limited endocrinology specialists, uneven geographic service distribution, and financial obstacles [6]. Understanding the trends, demographic disparities, and systemic barriers is critical to inform effective policy interventions and reduce the diabetes burden [1,7].

The complexity of diabetes arises from interactions among biological, behavioural, social, and structural determinants [8]. Excess adiposity, sedentary lifestyles, and nutritional transitions toward calorie-dense diets are major contributors [9]. National surveys indicate that over 50% of adults are overweight or obese, with women particularly affected, increasing population-level risk [10]. Moreover, undiagnosed cases remain substantial, delaying treatment and increasing complications such as cardiovascular disease, neuropathy, renal failure, and retinopathy [11]. The health system faces limitations in chronic care capacity, including inadequate integration of diabetes care into primary healthcare, inconsistent follow-up, and restricted access to medications [6,12]. Socioeconomic disparities amplify these challenges, with rural and low-income populations having poorer access to preventive and clinical services [13]. Finally, Jamaica lacks comprehensive chronic disease surveillance, complicating trend tracking and intervention evaluation [3]. Addressing these determinants is essential to mitigate the impact.

Globally, diabetes prevalence shows marked variation by region, with North America reporting rates above 13%, Western Europe approximately 8%, and Sub-Saharan Africa about 6% [14]. Jamaica's prevalence is higher than in several Sub-Saharan and Latin American countries, indicating an accelerated epidemiological transition [15]. Rising obesity, dietary shifts toward processed foods, and urbanisation are consistent drivers worldwide, but healthcare system capacity and policy responses differ, influencing disease control [16]. Understanding Jamaica's trends in this comparative context allows for identification of effective strategies and potential gaps in prevention and care [14].

This study aims to evaluate diabetes prevalence trends, demographic disparities, awareness, treatment, and complications in Jamaica over the last 30 years. Specifically, objectives include quantifying prevalence over time, identifying population subgroups at highest risk, comparing national trends to international benchmarks, assessing gaps in care and awareness, and providing evidence-based recommendations for health policy and clinical interventions. These objectives address the knowledge gap in longitudinal population-level studies in Jamaica and support

targeted interventions [17].

Literature Review

Diabetes prevalence in the Caribbean has increased steadily over the past three decades, driven by ageing populations, urbanisation, and lifestyle transitions [2,18]. Studies in Jamaica and Trinidad report similar patterns, with adult prevalence ranging from 7%–13% in the past 15 years [19]. Comparative research indicates that North America and the Middle East experience higher prevalence, largely due to obesity, sedentary behaviour, and diet [14,20]. Sub-Saharan Africa reports lower absolute rates, though proportional increases are rapid due to urbanisation and changing dietary patterns [21]. Jamaica's unique challenge includes a combination of high obesity prevalence, limited healthcare resources, and systemic inequities that amplify disease burden [2,4,18,22]. Regional disparities in physical health, including rural-urban differences, are consistent with global observations that service availability and health literacy strongly influence diabetes outcomes [23].

Obesity is strongly correlated with diabetes risk in Jamaica, particularly among women [10]. National surveys indicate over 50% of adults are overweight or obese, with central adiposity a key driver of insulin resistance [24]. Dietary transitions toward high-calorie, processed foods, coupled with declining physical activity, have been documented across Caribbean urban centers [25]. Behavioural interventions remain limited in reach and efficacy, resulting in continued prevalence escalation [10,25]. Globally, high-income countries show that structured prevention programs, lifestyle interventions, and community support can mitigate risk and improve glycaemic control [14]. Jamaica has piloted some programs, but coverage remains limited, and outcomes are underreported [19]. Comparative analysis highlights the need for culturally tailored, scalable prevention programs.

Healthcare access is critical for diabetes management, yet Jamaica faces constraints in workforce capacity, facility distribution, and affordability [6]. Glycaemic control is suboptimal, with only about 43% of diagnosed adults achieving target glucose levels [11]. North American and European systems report control rates exceeding 50–60%, illustrating the impact of structured care pathways, regular monitoring, and patient education [16]. Rural populations in Jamaica experience reduced access to screening and treatment services, similar to patterns in Latin America and Sub-Saharan Africa [21]. Structural barriers, including insufficient clinics and specialists, are compounded by social stigma and low health literacy [22]. This literature underscores the importance of integrated care models that combine prevention, early detection, and chronic disease management.

Complications from uncontrolled diabetes impose significant clinical and economic burdens [11]. Cardiovascular disease, stroke, amputations, renal failure, and neuropathy are prevalent among Jamaican adults with diabetes [1,11]. International studies indicate that structured chronic care programs can reduce complications and healthcare costs [14,16]. Jamaica's fragmented health system limits such interventions, particularly in rural and underserved areas [6,12]. Comparisons with Latin American nations highlight that multi-sectoral interventions, policy support, and community engagement are critical to improving outcomes [21]. These findings reinforce the need for comprehensive approaches to diabetes prevention, awareness, and treatment.

Methods

Study Design and Data Sources

This study employed a longitudinal secondary data analysis of diabetes prevalence in Jamaica from 1995–2024. Data were obtained from national health surveys, hospital records, and the International Diabetes Federation (IDF) [3,5,11]. Comparative international data were drawn from WHO regional statistics [14]. The study included adults aged 20–79 years. Prevalence, demographic patterns, and healthcare access indicators were extracted and harmonised across surveys for consistency [17]. Ethical approval was not required as all data were de-identified and publicly available.

Data Analysis

Descriptive and trend analyses were conducted to evaluate prevalence changes over time. Comparative analyses included North America, Western Europe, Latin America & the Caribbean, and Sub-Saharan Africa [14,15]. Time-series visualisations illustrated prevalence trajectories, and age- and sex-stratified analyses highlighted high-risk populations. Correlation analyses examined associations with obesity, urbanisation, and healthcare access [10,12]. Data reliability was assessed through triangulation across sources, ensuring consistency between national surveys and IDF estimates [3,5]. Limitations included variability in survey intervals and potential differences in diagnostic criteria.

Findings

Prevalence Trends and Demographics

Diabetes prevalence in Jamaica remained elevated and fluctuated over time (Table 1). Data show prevalence at 17.9% in 1995, decreasing to 7.9% in 2007, rising to 12% in 2016, and reaching 12.5% in 2024 [3,5,11]. Older adults and women were disproportionately affected, consistent with obesity prevalence and lifestyle risk factors [10,12]. Urban populations exhibited higher prevalence than rural areas, reflecting differential access to high-calorie diets and lifestyle changes. Comparisons with global regions indicate Jamaica exceeds Sub-Saharan Africa (6.4%) and Western Europe (8.1%) but remains slightly below North America (13.2%) [14]. This trend suggests a persistent metabolic burden that is influenced by demographic, behavioural, and environmental factors. Historical urbanisation and dietary transitions contributed to these observed patterns [19,25].

Table 1: Diabetes Prevalence Estimates in Jamaica, 1995–2024

Year	Prevalence (%)	Age Group	Source
1995	17.9	Adults 15+	Historical estimate [2]
2007–08	7.9	Adults 15–74	JHLS 2 [17]
2016–17	12.0	Adults 15+	JHLS III [12]
2021	11.1	Adults 20–79	GlobalEconomy.com [11]
2024	12.5	Adults 20–79	IDF [3]

Awareness, Control, and Complications

Despite high prevalence, awareness, and glycaemic control remain limited. Surveys indicate that roughly 76% of diabetics were aware of their condition, but only 43% achieved control, with many untreated [11]. Uncontrolled diabetes contributes to complications, including cardiovascular disease, renal failure, neuropathy, and visual impairment [1,11]. Comparisons with high-income countries show higher awareness and control rates due to structured chronic disease care and monitoring [14]. Rural and low-income populations experience the greatest barriers to detection and treatment [12,21]. Structural factors such as workforce shortages and geographic service gaps exacerbate

these disparities. These findings highlight the urgent need for prevention, early detection, and integrated chronic care systems.

Discussion

Diabetes prevalence in Jamaica reflects a convergence of biological, behavioural, and systemic factors. Rapid urbanisation, dietary transitions towards processed and high-calorie foods, and sedentary lifestyles have contributed to rising obesity rates, a major risk factor for type 2 diabetes [10,12,25]. Older adults, particularly women, remain disproportionately affected due to higher adiposity and associated metabolic risk [4,10]. Comparative global data indicate that regions with high prevalence, such as North America and the Middle East, share similar risk factor patterns but differ substantially in healthcare system capacity [14,20]. In these high-income regions, organised primary care systems and structured screening programs facilitate early detection and chronic disease management, resulting in higher awareness and control rates [14,16]. Jamaica, in contrast, faces gaps in workforce capacity, geographic service distribution, and chronic care integration [6,12]. These structural limitations complicate efforts to reduce prevalence and manage existing cases effectively.

The economic and social implications of diabetes in Jamaica are profound. The disease contributes significantly to healthcare expenditures due to hospitalisations, long-term management of complications, and productivity losses [1,11]. Diabetes-related mortality ranks among the leading causes of death for both men and women in Jamaica [14]. Public health education campaigns have increased awareness but have not consistently translated into behavioural change, due to entrenched cultural and social norms around diet and physical activity [10,25]. Comparisons with Latin America show similar challenges, with rural and low-income populations experiencing the greatest barriers to care [21]. This underscores the need for sustained, multi-sectoral interventions that integrate education, healthcare access, and lifestyle modification [19]. Without such interventions, Jamaica's prevalence is likely to remain elevated despite policy efforts.

The disparities between urban and rural populations highlight structural and social determinants of health. Urban residents demonstrate higher prevalence due to lifestyle shifts, yet also have greater access to healthcare services, illustrating an inequity paradox [12]. Rural populations, by contrast, experience lower diagnosis rates due to geographic and financial barriers, leading to delayed care and higher complication rates [21]. Comparisons with Caribbean neighbours indicate that Jamaica's prevalence is higher than in several small island states but below the North American and Middle Eastern context [14,15]. Age-stratified data show that prevalence sharply increases after age 45, highlighting the need for age-targeted screening and intervention programs [4,12]. The combination of high prevalence, low control rates, and systemic inequities necessitates comprehensive public health strategies. These must integrate prevention, clinical care, surveillance, and policy measures to mitigate long-term health and economic burdens.

Integrated prevention strategies are essential for addressing the rising diabetes burden in Jamaica. Lifestyle modification programs targeting obesity, physical inactivity, and dietary risk factors are critical [10,25]. Community-based interventions, including education, peer support, and structured monitoring, have demonstrated effectiveness in international contexts and could be adapted locally [16,19]. Policy-level measures, such as taxation on sugar-sweetened beverages and regulation of processed foods, could reduce exposure to dietary risk factors [20]. Surveillance systems need strengthening to monitor prevalence, complications, and outcomes systematically [3,14]. Healthcare workforce development, including training in chronic disease management and expanding rural service coverage, is necessary to improve access and quality of care [6,12]. These multi-level interventions, combined with targeted public education, offer the greatest potential for reducing the diabetes burden sustainably.

Recommendations

- **Strengthen Primary Healthcare:** Enhance primary care capacity to conduct routine screening, early detection, and chronic disease management. Training for healthcare providers in diabetes management and monitoring should be prioritised, particularly in rural clinics [6].
- **Public Health and Lifestyle Interventions:** Implement culturally tailored health promotion programs focusing on obesity reduction, physical activity, and healthy diet [10,25]. Policies regulating sugar-sweetened beverages and processed foods are recommended to address population-level risk factors [20].
- **Surveillance and Data Systems:** Develop and strengthen national chronic disease surveillance infrastructure to monitor prevalence trends, treatment outcomes, and complications [3,14]. This will enable evidence-based policy decisions and evaluation of intervention effectiveness.
- **Community-Based Support:** Expand community programs that provide patient education, peer support, and self-management tools to improve glycaemic control [19]. Empower patients to engage in consistent monitoring and adherence to therapy.
- **Address Health Equity:** Focus interventions on rural and low-income populations, reducing geographic and socioeconomic disparities in access to services [21]. Mobile clinics and telehealth may help bridge care gaps.
- **Intersectoral Collaboration:** Engage multiple ministries (health, education, agriculture, finance) to address social determinants of health comprehensively. Coordinated action is essential to mitigate lifestyle and environmental risk factors.

Conclusion

Diabetes mellitus remains a major public health challenge in Jamaica, with prevalence persisting above global averages. Age, sex, urbanisation, obesity, and lifestyle transitions drive this epidemiological trend [10,12]. Despite policy efforts and awareness campaigns, control, treatment, and surveillance remain suboptimal [3,11]. Comparisons with global regions reveal that Jamaica is performing better than some low-income countries but lags behind high-income regions with structured chronic care systems [14,16]. The burden disproportionately affects women, older adults, and rural populations, highlighting inequities in access and outcomes [4,21]. Integrated prevention strengthened primary care, community support, and enhanced surveillance are essential to reduce the burden [6,19]. Coordinated multi-sectoral approaches targeting structural, behavioural, and healthcare determinants offer the best opportunity to improve outcomes and reduce long-term complications.

Appendices

Appendix 1 – Diabetes Prevalence Trend (1995–2024)

Year	Prevalence (%)
1995	17.9
2007	7.9
2016	12.0
2021	11.1
2024	12.5

Appendix 2 – Age-Specific Diabetes Prevalence (2016–2017)

Age Group	Prevalence (%)
15–24	2.3
25–34	6.8
35–44	13.5
45–54	21.7
55–64	27.4
65–74	32.8
75+	40.2

Appendix 3 – Comparative Diabetes Prevalence by Region (2024, % adults)

Region	Prevalence (%)
Jamaica	12.5
North America	13.2
Western Europe	8.1
Latin America & Caribbean	11.8
Sub-Saharan Africa	6.4
South-East Asia	10.5

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