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Outcomes and Demographic Characteristics of Diabetes Admissions in Federal Teaching Hospital Ido-Ekiti: A Retrospective Study

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Abstract

Background: Diabetes mellitus remains a significant public health challenge globally, with increasing morbidity and mortality in low and middle-income countries. Understanding outcomes and demographic characteristics of diabetic patients provides insight into disease patterns and guides management strategies. **Objective:** This study aimed to assess the demographic characteristics and clinical outcomes of patients admitted to Federal Teaching Hospital Ido-Ekiti (FETHI) with diabetes mellitus. **Methods**: A retrospective review of medical records of diabetic patients admitted to FETHI between January 2013 and December 2022 was conducted. Patients with a documented diagnosis of type 2 diabetes mellitus were included in the study. Missing data were handled by pair-wise deletion during analysis to preserve available information. Data extracted included socio-demographic details, clinical presentations, length of stay, and outcomes. Statistical analysis was performed using descriptive and inferential methods. **Results**: Out of 2,669 medical admissions during the study period, 168 (11.1%) were diabetes-related. The mean age of the patients was 58.6 ± 15.4 years, with the majority in the middle-aged and elderly groups. The leading causes of admission were diabetic foot ulcer (47.0%), hyperglycaemic emergencies **(**25.6%), severe hypertension (18.5%), and sepsis (17.9%). Duration of hospital stay ranged from 1 to 350 days, with a mean of 47.6 ± 69.6 days. Clinical outcomes were categorised as discharged or referred (76.8%), discharged against medical advice (13.7%) and died (9.5%). **Conclusion/ Recommendations:** The study demonstrated a serial increase in diabetic admissions over the review period, with diabetic foot ulcers and hyperglycaemic emergencies being the leading causes. The prolonged hospital stays and notable mortality highlight the significant burden of diabetes-related complications. The increasing prevalence of diabetes mellitus should be a concern for policymakers for the disease's prevention and treatment. There should also be regular community-based screening programmes to improve early diagnosis and reduce late-stage complications in middle-aged and elderly adults.

Keywords: Disease patterns, Pairwise deletion, retrospective review, Foot ulcer

Introduction

Due to the high expenses of managing diabetes mellitus and its complications, it remains a major cause of morbidity and mortality worldwide. Diabetes is estimated to account for approximately 11.3% of global mortality, with the lowest rate (6.8%) in the Africa Region and the highest rate (16.2%) in the Middle East and North Africa. Nearly half (46.2%) of diabetes-related deaths occur in individuals under 60 years of age. Within this demographic, the Africa Region exhibits the highest proportion (73.1%) of deaths associated with diabetes, whereas the Europe Region shows the lowest proportion (31.4%) (Saeedi et al., 2020). The prevalence of diabetes has been increasing more swiftly in low- and middle-income nations

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than in high-income nations (World Health Organization, 2022). Diabetes mellitus frequently correlates with a significant illness burden in underdeveloped nations like Nigeria. (Mohan et al., 2020).

Diabetes is experiencing rapid global growth and is expected to impact around 693 million adults by 2045. In Nigeria, 3.9 million adults were diagnosed with diabetes in 2019, with projections indicating an increase to around 6.0 million by 2045 (Olamoyegun et al., 2024). The prevalence of diabetes among adults in Nigeria increased significantly from around 2.2% in 1992 to about 10.5% in 2022, according to studies comprising a nationwide survey, a systematic review and meta-analysis, community-based reports, and other epidemiological studies (Ajayi et al., 2023).

Diabetes Mellitus is linked to serious side effects that affect the microvascular (diabetic kidney disease, diabetic retinopathy, and neuropathy) and macrovascular (cardiovascular disease) systems. For those with diabetes, these consequences lead to decreased quality of life, increased death rates, renal failure, and eyesight impairment (Cole & Florez, 2020). Most of the deaths related to diabetes occur in individuals below the age of 60, which is the productive segment of the population. Nigeria's healthcare situation is characterised by a dual burden of diseases, insufficient allocation of resources for healthcare, and a lack of healthcare professionals, particularly in rural areas. The scarcity of specialists in diabetes care is a significant obstacle to providing adequate diabetes management in Nigeria (Olamoyegun et al., 2020). Numerous studies have been conducted on the complications related to diabetes mellitus in hospitalised patients, with alarming results. A common and serious complication that raises rates of morbidity and mortality, hospitalisation, and extended hospital stays is diabetic foot ulcers (DFUs) (Aliyu et al., 2023). Numerous studies on the consequences of diabetes mellitus in hospitalised patients have shown concerning results. A common and serious complication of diabetes is diabetic foot ulcers (DFUs), which raise rates of morbidity and death and necessitate hospitalisation and extended stays. In Nigeria, foot issues, including ulcers and amputations, are the leading cause of hospital admissions (Aliyu et al., 2023). Nigeria has a significant prevalence of DFUs; in Kano, a rate of 22.5% was recorded (Aliyu et al., 2023). Infections linked to sepsis, heart conditions, malignancies, and diabetes crises are additional problems (Omenai et al., 2020). Anaemia, hyperglycemic crises, lower extremity amputations, and systemic hypertension are also frequent (Ugwu et al., 2019).

According to Thewjitcharoen et al. (2020), there have been reports of severe DFUs, prior amputations, and a 12% mortality rate within a year following discharge. These results highlight the range and severity of problems associated with diabetes in hospitalised patients. Patients with diabetes were frequently reported to have a high prevalence of peripheral neuropathy and peripheral arterial disease. Africa has a comparatively high prevalence of diabetic peripheral neuropathy. A meta-analysis and systematic review of the prevalence of diabetic peripheral neuropathy in Africa found that the pooled prevalence among diabetic patients was 46%, whereas in West Africa it was 49.4% (Shiferaw et al., 2020). The prevalence of diabetic nephropathy and diabetes-related cardiovascular consequences, including peripheral disease and stroke, is becoming alarming in Nigeria (Agofure et al., 2020). A study of diabetes patients in Delta State revealed that the nation's prevalence of heart attacks was 27.27% and renal failure was 27.87% (Agofure et al., 2020). Overall, Nigeria's rising diabetes incidence is driving up hospitalisations and complications associated with the disease, which emphasises the need for better diabetes treatment in the country, including greater access to healthcare services, education, and preventative measures.

Although diabetes mellitus has been extensively researched as a global health concern, little is known about the demographics and outcomes of hospitalised diabetic patients in Nigeria. Most of the research conducted in sub-Saharan Africa has focused on prevalence rates, risk factors, and outpatient glycemic control, with little attention to

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inpatient outcomes and complication patterns. Without a thorough analysis of all diabetes-related admissions over an extended period of time, the majority of Nigerian research that is currently available has focused on certain complications, such as diabetic foot ulcers or hyperglycemic crises, frequently in small cohorts. Additionally, insufficient research has examined the effects of sociodemographic factors (such as age, sex, and occupation) on hospital outcomes, including mortality, length of stay, and discharge status. This dearth of data makes it more difficult for physicians and healthcare workers to create focused interventions for high-risk populations. Additionally, the nation's rising diabetes-related cardiovascular morbidity and mortality rate highlights the need for local data that can guide context-specific management and prevention plans. By offering a 10-year retrospective evaluation of diabetes-related admissions at a tertiary hospital in Nigeria, this study fills these gaps by examining demographic trends, types of complications, lengths of hospital stay, and clinical outcomes. The chronic care model depicted in Figure 1 serves as the conceptual basis for this investigation. The CCM is based on the idea that, unlike the conventional reactive model, chronic diseases require a systematic, proactive approach to care delivery. With the ultimate goal of enabling patients to manage their diseases and enhance their quality of life effectively, it highlights the importance of collaborative interactions among patients, healthcare practitioners, and the healthcare system.

Research Questions

1. What is the prevalence of diabetes among patients admitted to FETHI hospital over a period of ten years?
2. What are the demographic characteristics of diabetic patients admitted to FETHI hospital?
3. What are the clinical outcomes of diabetic patients admitted to FETHI hospital over a 10-year period?
4. What is the nature of diabetes-related complications among patients admitted to FETHI hospital?
5. What comorbidities are associated with diabetic patients admitted to FETHI hospital?

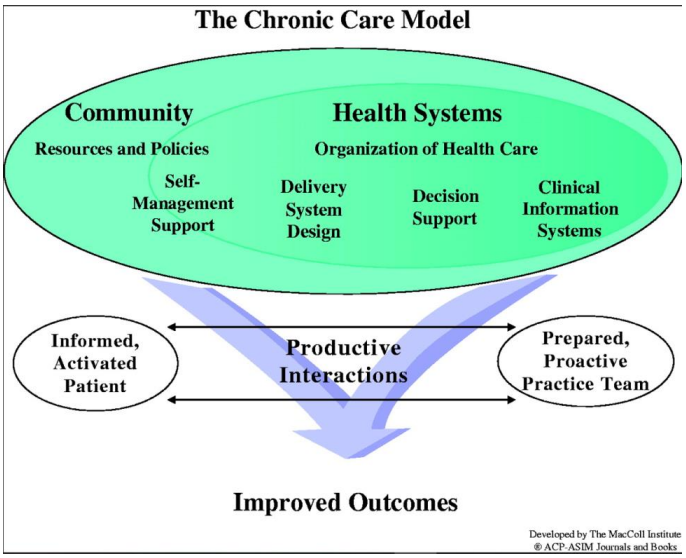

Figure 1: conceptual framework of the chronic care model

Source: http://www.improvingchroniccare.org/index.php?p=The_Chronic_Care_Model&s=2 (Wagner et al., 2001)

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Methodology

Study Area

This study was conducted at the Federal Teaching Hospital, Ido-Ekiti (FETHI)**,** located in Ekiti State, Southwest Nigeria. FETHI is a tertiary referral centre that provides specialist and general healthcare services to patients from Ekiti State and neighbouring states. The hospital has multiple clinical departments, including internal medicine, surgery, paediatrics, obstetrics and gynaecology, and family medicine. The medical wards admit a wide range of adult medical cases, including both communicable and non-communicable diseases such as diabetes mellitus. The hospital also serves as a training and research institution for healthcare professionals.

Study Design: A retrospective descriptive study was carried out to assess the demographic characteristics, clinical presentations, complications, and outcomes of diabetic patients admitted to FETHI. The study covered a 10-year period from January 1, 2013, to December 31, 2022.

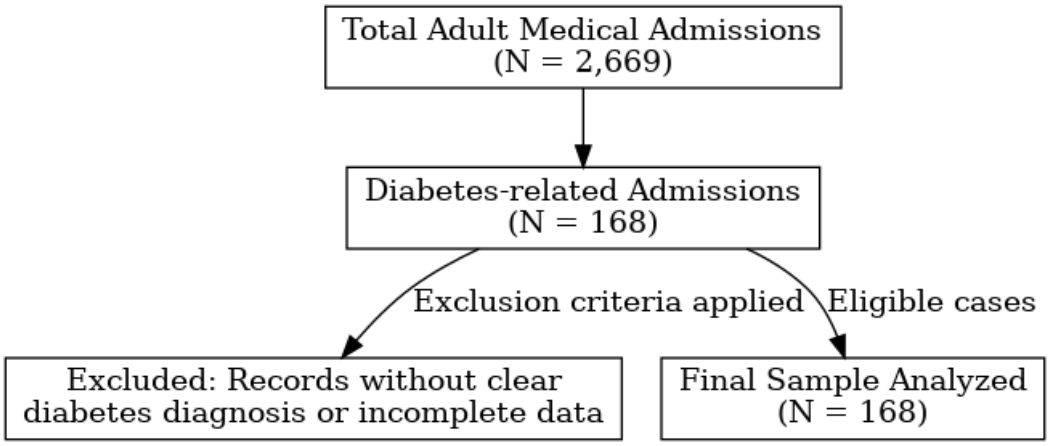
Study Population: The study population comprised all patients 18 years and above admitted to the medical wards of FETHI with a diagnosis of type 2 diabetes mellitus during the study period.

Sampling Technique and Sample Size: **A** comprehensive enumeration sampling technique was employed. All eligible cases of diabetes-related admissions during the 10-year period were included. A total of **168 patients** met the eligibility criteria and formed the final sample for analysis.

Eligibility Criteria

i. Inclusion criteria: Patients aged ≥18 years, admitted to FETHI medical wards between January 2013 and December 2022, with a confirmed diagnosis of diabetes mellitus (type 2).

ii. Exclusion criteria: Patients with incomplete medical records or unclear documentation of diabetes diagnosis.



Data Collection Procedures: Patient registers were obtained from the nurses in the medical wards, after which hospital numbers of admitted patients were manually searched to identify those admitted for diabetes mellitus. Using hospital numbers, case files were retrieved, and eligible patients were selected based on the inclusion and exclusion criteria.

A structured checklist was used to extract relevant data, including demographic variables such as age, sex, marital status, education level, occupation, household income, and method of healthcare financing. The clinical variables: diabetes-related complications (e.g., diabetic foot ulcer, hyperglycaemic emergencies), co-morbidities, length of hospital stay, and outcomes (discharged,

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referred, discharged against medical advice, or died). Relevant information for each patient was extracted using a structured checklist. Variables collected included socio-demographic characteristics (age, sex, marital status, education level, occupation, household income, and method of healthcare financing), diabetes-related complications, co-morbidities, length of hospital stay, and clinical outcomes (discharged, referred, discharged against medical advice, or death). Data were entered into a secure electronic database and anonymised to protect patient confidentiality. Quality checks were conducted at multiple stages to ensure the dataset's accuracy, consistency, and completeness. This rigorous process ensured that the study objectives were met and the research questions were addressed comprehensively.

Statistical Analysis

Data were entered and analysed using the Statistical Package for the Social Sciences (SPSS), version 27, with a significance level (alpha) of 0.05**.** This software was chosen because it is widely validated, user-friendly, and suitable for handling both categorical and continuous datasets standard in epidemiological and clinical research. Descriptive statistics were used to summarise patient demographics, clinical characteristics, and outcomes. Continuous variables such as age and length of hospital stay were expressed as mean ± standard deviation. In contrast, categorical variables such as sex, complications, and clinical outcomes were presented as frequencies and percentages. Inferential statistics were applied to test associations between variables. For categorical variables, Chi-square tests were used.

Ethical Considerations

The study protocol was approved by the Ethics Committee of Federal Teaching Hospital, Ido-Ekiti (Protocol Number: ERC/2023/08/30/1023B, Date: 30/08/2023). The study complied with ethical principles, including respect for autonomy and confidentiality. Informed consent was sought because the data were anonymised, and there was no direct contact with the patients. The researchers ensured that the data were handled with confidentiality and respect. The researchers also adhered to ethical guidelines, ensuring the study was conducted with integrity and transparency, and upholding these principles throughout the study process.

Results

Prevalence of DM admissions

The study involved 168 eligible participants. Table 1 shows that the overall prevalence of Diabetes Mellitus among patients admitted to the Federal Teaching Hospital, Ido, between 2013 and 2022 was 11.1%. Analysis also revealed that the prevalence had been steadily increasing over the last six years, with the highest prevalence in this study, 22.5%, recorded in 2022.

Sociodemographic Characteristics

A good percentage of them were elderly (38.7%) and had an overall mean age of 58.6 ± 15.4 years. About 43.5% of these respondents were male, while 56.5% were female. Vast majorities were Yorubas (95.2%), married (87.5%), had only attained a secondary level of education (59.5%), were residing in the rural communities (62.5%), were traders or business people (33.9%) and were earning at least 50,000 Naira per month.

Duration of Admission

Figure 2 shows that more than half of the patients spent less than 30 days on admission, while about 17% were admitted for more than 90 days. Table 3 shows that the main reasons for admission were diabetic foot ulcer (47.0%), uncontrolled hyperglycemia (26.2%), hyperglycemic emergencies (25.6%), severe hypertension (18.5%), and sepsis (17.9%).

About 13.1% had ever smoked any type of cigarette (Table 4), 22.6% had ever taken alcohol, 13.1% were very active, while about 27.4% rarely or never consumed fruit or vegetables in recent times. Table 5 shows the co-morbidities among patients. The most common among these were Obesity (41.1%), dyslipidaemia (38.7%), retinopathy (25.0%), neuropathy (19.0%), cardiovascular diseases

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(16.7%), and PCOS (15.5%). However, about 24.4% did not experience any co-morbidity.

Outcomes of Diabetic Patients Admitted at FETHI (2013-2022)

Regarding the outcomes of diabetic admissions in terms of death rate at the Federal Teaching Hospital, Ido-Ekiti, during the years under review, as shown in Figure 3 below, about 76.8% were recorded to have been discharged or referred, 13.7% were discharged against medical advice, while 9.5% of them died.

Causes of Death in Diabetic Patients

Figure 4 shows that the most common causes of death among diabetic patients on admission were diabetic foot ulcer (62.5%) and hyperglycemic emergency (56.3%), followed by stroke (6.3%).

Table 6 depicts the diabetes related complications among the studied patients. Most prominent of these complications included diabetic foot ulcer (42.9%), diabetic nephropathy (24.4%), Hyperosmolar Hyperglycemic State (HHS) (21.4%), diabetic neuropathy (20.2%), cardiovascular disease (16.7%), diabetic retinopathy (13.7%), DKA (11.9%) and hypoglycemia (7.1%). Table 7 shows that there were no statistically significant relationships between clinical outcomes in terms of glycemic control and all the socio-demographic characteristics at 0.05. Table 8 shows that there was no statistically significant relationship between clinical outcomes and all the socio-demographic characteristics at 0.05 level.

Table 1: Prevalence of DM admissions (2013 – 2022)

Year	Total number of hospital admissions (adults)	Number of admitted DM patients	Number of case notes retrieved	Prevalence of DM admissions
2013	191	36	25	18.8%
2014	219	43	25	19.6%
2015	87	4	10	4.6%
2016	293	48	21	16.4%
2017	188	2	2	1.1%
2018	364	18	6	4.9%
2019	471	37	19	7.9%
2020	279	16	11	5.7%
2021	297	28	17	9.4%
2022	280	63	32	22.5%
Total	**2669**	**295**	**168**	**11.1%**

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Table 1: Socio-demographic characteristics of diabetic patients (2013 – 2022)

Variable	Frequency N = 168	Percentage (%)
Age group (in years)		
<35	9	5.4
35 – 44	18	10.7
45 – 54	35	20.8
55 – 64	41	24.4
≥ 65	65	38.7
Mean age ± SD	58.6 ± 15.4	
Gender		
Male	73	43.5
Female	95	56.5
Ethnicity		
Yoruba	160	95.2
Hausa	2	1.2
Ibo	6	3.6
Marital Status		
Single	10	6.0
Married	147	87.5
Separated	1	0.6
Widowed	10	6.0
Educational Status		
None	10	6.0
Primary	11	6.5
Secondary	100	59.5
Tertiary	47	28.0
Place of residence		
Rural	105	62.5
Semi-urban	30	17.9
Urban	33	19.6
Occupation		
Civil/ Public Servant	20	11.9
Trader/ Business	57	33.9
Artisan/Professional	14	8.3
Farmer	34	20.2
Retired	25	14.9
Unemployed	18	10..7
Income		
Less than N50,000	22	13.1
N50,000 and above	146	86.9

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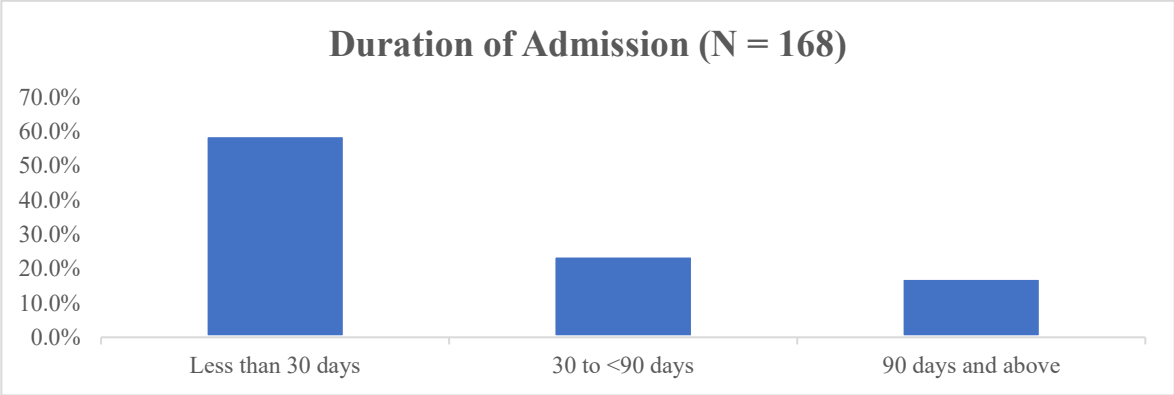

Figure 2: Duration of Admission

Table 3: Indications for admission (2013 – 2022)

Variable	Frequency N = 168	Percentage (%)
Indications for admission*		
Diabetic foot ulcer	79	47.0
Stroke	4	2.4
Nephropathy	14	8.3
Uncontrolled hyperglycemia	44	26.2
Sepsis	30	17.9
Severe hypertension	31	18.5
Hyperglycemic Emergencies	43	25.6
Others	13	7.7

Table 4: Some risk factors of Diabetes among patients admitted (2013 – 2022)

Variable	Frequency N = 168	Percentage (%)
Ever smoked cigarette		
Yes	22	13.1
No	146	86.9
Ever taken alcohol		
Yes	38	22.6
No	130	77.4
Overall physical activity level		
Low activity	16	9.5
Moderately active	130	77.4

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Very active	22	13.1
Fruit and vegetable consumption		
Rarely or never	46	27.4
Several times a week	41	24.4
Daily	48	28.6
Multiple times a day	33	19.6

Table 5: Co-morbidities among diabetic patients (2013 – 2022)

Variable	Frequency N = 168	Percentage (%)
Comorbidities*		
Cardiovascular diseases (CVDs)	28	16.7
Dyslipidaemia	65	38.7
Nephropathy (kidney disease)	9	5.4
Neuropathy (nerve damage)	32	19.0
Retinopathy	42	25.0
Peripheral vascular disease	13	7.7
Diabetic foot complications	15	8.9
Obesity	69	41.1
Polycystic ovary syndrome (PCOS)	26	15.5
Others	6	3.6
None	41	24.4

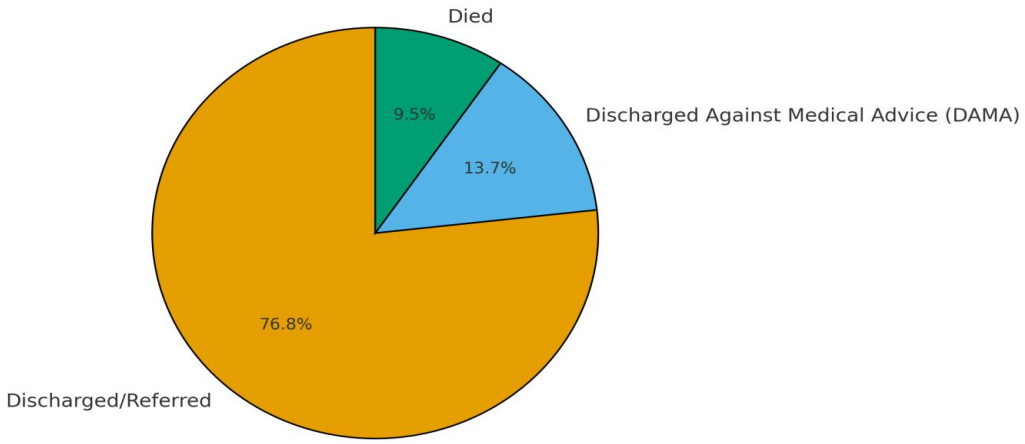

Figure 3: Outcomes of Diabetic Patients

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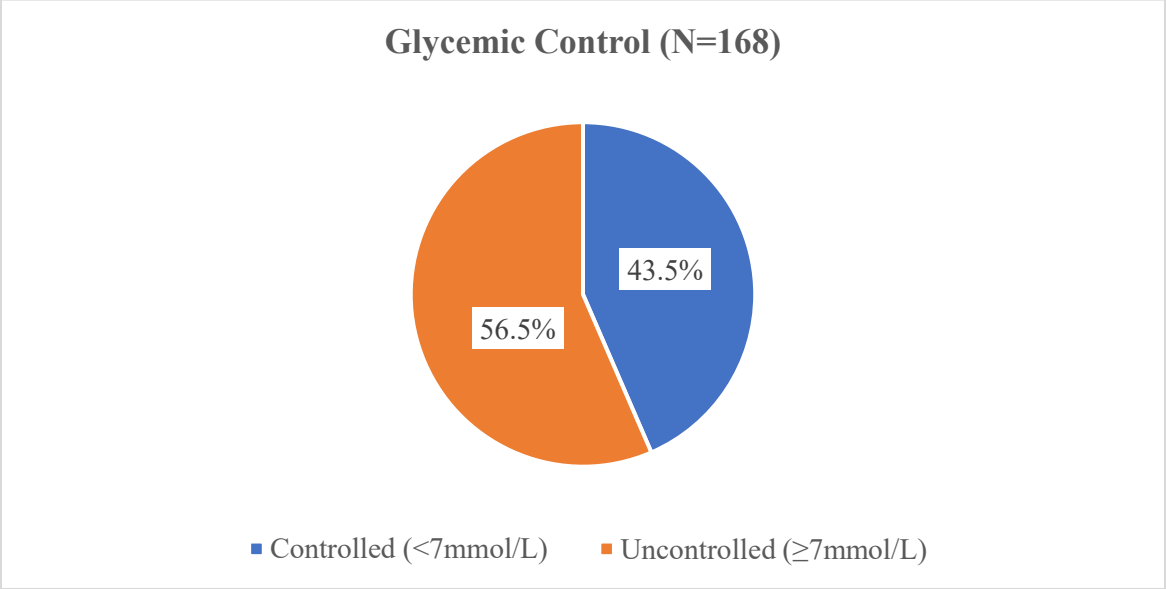

Figure 4: Causes of Death in Diabetic Patients

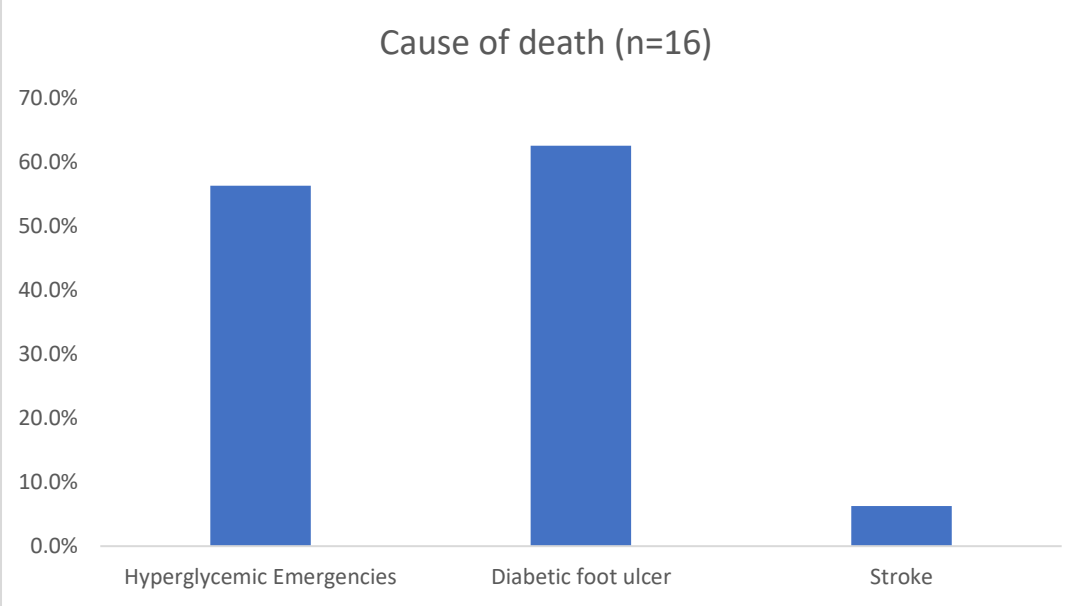

Figure 5 shows that the Fasting Plasma Glucose level last checked at discharge/ referral/ DAMA/ death was controlled in 43.5% of the cases.

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Table 6: Diabetes-related complications among patients (n=2013 – 2022)

Variable	Frequency N = 168	Percentage (%)
Diabetes-related complications		
Diabetic Retinopathy	23	13.7
Diabetic Nephropathy	41	24.4
Diabetic Neuropathy	34	20.2
Diabetic Foot Ulcers	72	42.9
Cardiovascular Disease	28	16.7
Peripheral Vascular Disease	34	20.2
Diabetic Ketoacidosis (DKA)	20	11.9
Hyperosmolar Hyperglycemic State	36	21.4
Gastroparesis	1	0.6
Hypoglycemia	12	7.1
Others	6	3.6

Table 7: Relationships between clinical outcomes of diabetes and socio-demographic characteristics

Variable	Glycemic Control			
	Controlled n (%)	Controlled n (%)	Chi square	p-value
Age group (in years)				
<35	4 (44.4)	5 (55.5)	5.428	0.246
35 – 44	4 (22.2)	14 (77.8)		
45 – 54	13 (37.1)	22 (62.9)		
55 – 64	19 (46.3)	22 (53.7)		
≥ 65	33 (50.8)	32 (49.2)		
Gender				
Male	33 (45.2)	40 (54.8)	0.161	0.688
Female	40 (42.1)	55 (57.9)		
Ethnicity				
Yoruba	68 (42.5)	92 (57.5)	2.766	0.251
Hausa	2 (50.0)	0 (0.0)		
Ibo	3 (50.0)	3 (50.0)		
Marital Status				
Single	5 (50.0)	5 (50.0)	0.992	0.803
Married	64 (43.5)	83 (56.5)		
Separated	0 (0.0)	1 (100.0)		
Widowed	4 (40.0)	6 (60.0)		
Educational Status				
None	3 (30.0)	7 (70.0)	2.436	0.487
Primary	3 (27.3)	8 (72.7)		

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Secondary	47 (47.0)	53 (53.0)		
Tertiary	20 (42.6)	27 (57.4)		
Place of residence				
Rural	46 (43.8)	59 (56.2)	0.353	0.838
Semi-urban	14 (46.7)	16 (53.3)		
Urban	13 (39.4)	20 (60.0)		
Occupation				
Civil/ Public Servant	9 (45.0)	11 (55.0)	1.332	0.932
Trader/ Business	25 (43.9)	32 (56.1)		
Artisan/Professional	5 (35.7)	9 (64.3)		
Farmer	14 (41.2)	20 (58.8)		
Retired	13 (52.0)	12 (48.0)		
Unemployed	7 (38.9)	11 (61.1)		
Income				
Less than N50,000	65 (45.8)	77 (54.2)	2.014	0.156
N50,000 and above	8 (30.8)	18 (69.2)		

Table 8: Relationship between clinical outcome of diabetes and duration of admission

Variable	Glycemic Control			
	Controlled n (%)	Controlled n (%)	Chi square	p-value
Duration of admission				
<30 days	45 (45.5)	54 (54.4)	0.536	0.765
30 - <90 days	17 (42.5)	23 (57.5		
≥ 90days	11 (37.9)	18 (62.1)		

Discussion

The goal of this retrospective database analysis was to examine the clinical outcomes and demographics of 168 diabetes patients who were discharged from 2669 adult admissions documented at the Federal Teaching Hospital in Ido-Ekiti over a ten-year period (2013–2022). The overall prevalence of diabetic admission which had been on a steady rise in recent times was 11.1%. This rate was significantly higher than the 5.7% national prevalence found in Uloko et al. (2018)'s metal analysis and systematic reviews. The fact that our study is hospital-based could be the cause of this discrepancy.

In a similar vein, our study's diabetes prevalence exceeded Ogunmola et al. (2013)'s 4.8% estimate. That study was conducted about a decade ago and was restricted to the rural population. We speculate that urbanization and nutritional shift may have contributed to an increase in the prevalence of DM over the years. As a result, the disparity in DM prevalence between our study and the previous research could be explained by the passage of time, since some researchers have suggested that DM prevalence can double in a nation in just ten years (Biswas et al, 2022). This finding of this study is also consistent with reports from other sub-Saharan African countries, where hospital admissions for diabetes are increasing due to lifestyle transitions, urbanization, and the epidemiological shift from communicable to non-communicable diseases (Mbanya et al., 2019; IDF, 2021).

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Although figures vary by geography, degree of care, and diagnostic criteria, similar studies conducted in Nigeria have documented increased prevalence rates of diabetes admissions. The fact that this increase is in line with worldwide trends highlights how diabetes is becoming a major cause of hospital morbidity in low- and middle-income nations.

The mean age of patients in this study was 58.6 ± 15.4 years. The mean age of patients in this study was 58.6 ± 15.4 years. This appears comparable to a previous finding that the mean age of patients with diabetes was 56 (Pastakia et al, 2017). Additionally, a greater percentage of female patients with diabetes was identified in this study. Women comprised the bulk of the study participants.

The predominance of female admissions observed in this study is consistent with earlier Nigerian and sub-Saharan African literature. Olamoyegun et al. (2020) reported that women are more likely than men to engage in health-seeking behaviour, including hospital attendance, regular check-ups, and adherence to medical advice. This may partly explain why more women than men were captured in hospital-based data, as men often underutilise health services until complications are advanced. From an epidemiological perspective, this does not necessarily imply that diabetes prevalence is higher among women, but instead that women are more visible in hospital-based studies because of their greater engagement in healthcare.

Cultural and social dynamics in Nigeria may also shape these gender differences. Women often assume caregiving roles within families, which can heighten their awareness of health issues and motivate them to seek timely medical attention. Conversely, cultural expectations around masculinity may discourage men from presenting early to healthcare facilities, with many preferring self-management, traditional medicine, or delaying care until disease severity demands hospitalisation. Additionally, socioeconomic barriers, including financial dependence among women, can also influence the pattern of presentation — women may access healthcare through family networks or spousal support. In contrast, men may delay until their productivity is severely impaired.

The mortality rate of 9.5% observed in this study aligns with the findings of Mohan et al. (2020), who reported that diabetes-related deaths in low- and middle-income countries are frequently attributable to preventable complications such as foot ulcers, hyperglycemic crises, and stroke. The consistency between these findings suggests that, despite global advances in diabetes management, sub-Saharan Africa, including Nigeria, continues to experience disproportionately high morbidity and mortality due to late presentation, inadequate healthcare infrastructure, and limited access to specialised care.

In Nigeria, cultural and systemic factors play a critical role in shaping these outcomes. For instance, diabetic foot ulcers are often worsened by reliance on traditional remedies or delayed hospital presentation, stemming from cultural beliefs in herbal medicine and spiritual healing. Poverty and out-of-pocket healthcare financing further limit timely access to proper wound care, surgical interventions, or insulin therapy. Furthermore, stigma associated with amputation and misconceptions about diabetes as a "spiritual disease" often lead patients and families to conceal their condition until complications become life-threatening. The higher mortality linked to hyperglycemic emergencies and stroke also reflects poor continuity of care. In many Nigerian settings, patients lack access to regular glucose monitoring, affordable medications, and structured follow-up all essential components of the Chronic Care Model. Gender and cultural roles may compound this problem: women, though more health-seeking, may lack financial autonomy to afford sustained treatment, while men may delay care due to cultural norms of resilience and denial of illness.

In this study, no statistically significant relationship was found between socio-demographic characteristics and clinical outcomes in diabetic admissions. This finding contrasts with that of Aliyu

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et al. (2023), who reported significant associations between demographic variables, such as age, gender, and socioeconomic status, and diabetes outcomes. The divergence may reflect methodological differences, variations in sample size, or contextual disparities across study settings. Importantly, it underscores the complexity of diabetes care in Nigeria, where structural and cultural challenges may overshadow individual-level socio-demographic factors.

From a cultural perspective, the inability to establish these associations could be due to the homogenising effects of shared barriers in healthcare access across different groups. For example, regardless of age, gender, or income, patients in Nigeria often face similar obstacles such as high out-of-pocket healthcare costs, limited availability of essential drugs, inadequate diabetes education, and poor access to specialists. Furthermore, cultural practices such as reliance on traditional medicine, late hospital presentation, and stigma attached to complications (e.g., amputation following diabetic foot ulcer) may dilute the measurable effects of demographic variables on outcomes. Comparable patterns were observed in a study conducted at a general hospital (Iheanacho et al., 2023), which identified age, gender, and occupation as significant predictors of the number and type of diabetes-related complications. Likewise, in Southeast Nigeria, Okafor et al. (2024) demonstrated significant associations between socio-demographic variables (e.g., educational level, occupation, marital status) and patients' self-care practices, a critical determinant of outcomes. These findings suggest that, in non-emergency outpatient settings, demographic influences on disease management are more pronounced.

However, in this study setting, where systemic barriers such as insufficient hospital resources, high out-of-pocket costs, and delayed presentation due to cultural reliance on traditional healing practices are pervasive, the impact of individual socio-demographic factors on clinical outcomes may be overshadowed. This suggests that in environments with strong structural and cultural determinants, these wide-ranging systemic issues can dilute or eclipse the role of demographic variables.

The total number of adult admissions recorded over the ten years under this review (2013 to 2022) was 2669, of which 295 were DM-related. Overall prevalence of Diabetes Mellitus among patients admitted to the Federal Teaching Hospital, Ido, between 2013 and 2022 was 11.1%. Additionally, analysis showed that the prevalence has been steadily rising over the past six years, reaching its highest level in this study in 2022 at 22.5%.

A large percentage of them were elderly, with an overall mean age of 58.6 ± 15.4 years. About 43.5% of these respondents were male, while 56.5% were female. Vast majorities were Yorubas, married, had only attained a secondary level of education, resided in rural communities, were traders or business people (33.9%), and earned at least 50,000 Naira per month.

Regarding the clinical outcomes of diabetic admissions at the Federal Teaching Hospital, Ido-Ekiti, during the years under review, about 76.8% were recorded to have been discharged or referred, 13.7% were discharged against medical advice, while 9.5% of them died, with diabetic foot ulcer being the most prominent cause of death. Sepsis, severe hypertension, uncontrolled hyperglycemia, diabetic foot ulcers, and hyperglycemic crises were the primary causes of hospitalisation. Obesity (41.1%), dyslipidemia (38.7%), retinopathy (25.0%), neuropathy (19.0%), cardiovascular diseases (16.7%), and PCOS (15.5%) were the most prevalent co-morbidities. About 24.4%, however, did not suffer from any co-morbidities. Hyperosmolar Hyperglycemic State (HHS) (21.4%), diabetic neuropathy (20.2%), diabetic foot ulcer (42.9%), diabetic nephropathy (24.4%), cardiovascular disease (16.7%), diabetic retinopathy (13.7%), diabetic ketoacidosis (11.9%), and hypoglycemia (7.1%) were the most common consequences.

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Conclusion

The present study highlights that diabetes accounted for 11.1% of medical admissions at the Federal Teaching Hospital, Ido-Ekiti, with diabetic foot ulcer emerging as the most frequent cause of admission and a major contributor to mortality. The mortality rate of 9.5%**,** with deaths largely attributable to diabetic foot complications, hyperglycemic emergencies, and stroke, is consistent with prior African literature (Mohan et al., 2020; Iheanacho et al., 2023).

These findings emphasize the persistent burden of preventable complications in Nigerian tertiary hospitals, underscoring the urgent need for improved preventive, screening, and early intervention strategies. A notable finding from this study was the greater proportion of female patients admitted with diabetes, aligning with previous reports that women demonstrate more proactive health-seeking behavior compared to men (Olamoyegun et al., 2020; Okafor et al., 2024). This gendered pattern has important cultural implications in Nigeria, where women often have greater exposure to health facilities through reproductive and maternal health services. However, it also raises questions about the possible under-detection or under-utilization of care by men**,** who may delay presentation until complications are advanced.

Interestingly, this study did not establish significant relationships between socio-demographic factors and clinical outcomes**,** in contrast to earlier studies that found strong associations between variables such as age, education, and income and diabetes outcomes (Aliyu et al., 2023; Iheanacho et al., 2023). This discrepancy may reflect differences in sample size, study setting, or case mix. However, it also suggests the need for larger, multicenter studies that can better capture the nuanced effects of socio-demographic factors on diabetes progression and outcomes in Nigeria.

Taken together, these findings have critical clinical implications. They point to the need for strengthened foot care programs, routine screening for complications, and gender-sensitive health interventions to encourage earlier presentation and improved outcomes. Policymakers and hospital administrators should also consider establishing multidisciplinary diabetic care clinics, including podiatry and patient education units, which have been shown to reduce complication rates in other contexts.

Recommendations

The following are advised in light of the study's findings:

- With the existence or absence of risk factors, the recommended age at which people should start testing for prediabetes and type 2 diabetes should be lowered from 45 to 35 years old.
- Regardless of risk factors, it is recommended that all women get screened for undiagnosed diabetes at their first prenatal appointment or when they are thinking about getting pregnant.
- Individuals with prediabetes should undergo screening for type 2 diabetes at least once a year, with modifications made in accordance with each patient's particular risk/benefit analysis.
- According to suggested care guidelines, adults who are obese or overweight and at high risk of type 2 diabetes should focus on cardiovascular risk and related comorbidities, minimize the progression of hyperglycemia, and lose or prevent weight gain.
- Health institution managers should arrange training for concerned healthcare providers and establish a means to implement nurse-led diabetes self-management education.

For future research, three areas warrant particular attention:

- Gender differences in diabetes outcomes; exploring why women present more frequently, but whether men experience worse outcomes due to delayed care.
- Cultural and socioeconomic determinants of care utilisation; examining how beliefs, financial barriers, and health system trust affect diabetes outcomes in Nigerian settings.
- Intervention studies; assessing the effectiveness of structured diabetic foot care programs, patient education models, and chronic care frameworks such as the Chronic Care Model (Wagner et al.,

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2001; IDF, 2021) in reducing morbidity and mortality.

By addressing these gaps, future studies can not only refine our understanding of diabetes in Nigeria but also guide evidence-based interventions tailored to the country's cultural and health system realities.

Limitations

As a retrospective review, the analysis relied on secondary hospital records, which may be subject to documentation errors, incomplete entries, or misclassification bias. Although efforts were made to ensure data accuracy through careful quality checks, missing data and reliance on existing records could have influenced the findings. Also, the study was conducted in a single tertiary institution (Federal Teaching Hospital, Ido-Ekiti) which may limit the generalizability of the results to other healthcare settings in Nigeria or sub-Saharan Africa, particularly rural or primary care environments where resources, patient demographics, and health-seeking behaviors may differ. Furthermore, unmeasured confounders such as lifestyle factors, adherence to treatment, and access to community-based care were not captured, which may have influenced outcomes. Finally, the observational design precludes causal inferences, and the associations observed should be interpreted as descriptive rather than definitive.

Implication for nursing practice

Nurses are key players in the care of diabetes patients and implications of this study to nursing practice comprise of:

- identifying the clinical outcomes and comorbidities of diabetic patients, nurses can use the study's findings to guide the creation of evidence-based nursing treatments that will enhance diabetes management and lessen problems associated with the disease.
- Improved patient education: The study's findings can help nurses develop patient-centred education programs that are tailored to the demographic characteristics of diabetic patients, such as age, sex, and educational level, to improve patients' understanding of the disease and their ability to manage it effectively.
- Improved healthcare delivery: The study's findings can inform healthcare policymakers and healthcare providers of the need for more comprehensive diabetes management strategies, such as regular monitoring of glycemic control, early detection of diabetes-related complications, and timely referral to specialists, to improve healthcare delivery and outcomes for diabetic patients.
- Enhanced interdisciplinary collaboration: The study's findings can facilitate interdisciplinary collaboration among healthcare providers, including nurses, physicians, pharmacists, and dietitians, to develop and implement comprehensive diabetes management strategies that are based on evidence-based practices and patient-centered care.
- Future nursing research studies that are adapted to the unique requirements of diabetic patients in Nigeria can be developed using the study's findings as a baseline for additional nursing research on diabetes management and its associated outcomes in Nigeria.

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