Medication Adherence and Factors Associated with Optimal Adherence Among Type 2 Diabetic Patients Aged 40 and Older in Kericho County, Kenya

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Abstract

Background: Type 2 diabetes rises in Kenya, yet medication adherence factors remain understudied, particularly in Kericho County. This gap hinders the development of evidence-based interventions for this escalating global public health crisis. This study assessed medication adherence and its associated factors among type 2 diabetic patients aged 40 and older in Kericho County, Kenya.

Methods: This cross-sectional study involved 207 patients with type 2 diabetes, who were recruited using systematic random sampling. The Morisky Medication Adherence Scale-4 was used to evaluate medication adherence, and a structured questionnaire was used for socio-demographic and health-related information. Data was analysed using SPSS version 20. Medication adherence was categorised as high and moderate-low adherence. Bivariate and multivariate logistic regression were used to assess factors associated with optimal adherence. Significance level was set at < 0.05.

Results: The results revealed that only 10.1% of patients optimally adhered to diabetic medication. Male patients (AOR: 0.471, 95% CI: 0.147-0.869, *p*=0.031), patients with complications (AOR: 0.624, 95% CI: 0.256-0.835, *p*=0.035), and alcohol consumption (AOR: 0.418, 95% CI: 0.191-0.903, *p*=0.027) had lower odds of adhering to medication. Moreover, higher education attainment (AOR: 2.873, 95% CI: 1.243-12.187, *p*=0.037), patients with family history of diabetes (AOR: 2.513, 95% CI: 1.087-4.532, *p*=0.019) and those who received diabetes education (AOR: 2.394, 95% CI: 1.132-4.907, *p*=0.016) had higher likelihood of being adherent to medication.

Conclusion: The study found low levels of optimal diabetic medication adherence. The integration of patient-centred, targeted diabetes education and patient support into diabetes programs could enhance optimal medication adherence.

***Keywords**: Adherence, Medication, Type 2 Diabetes, Optimal Adherence, Kericho County*

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Introduction

Non-communicable diseases (NCDs) are the most common cause of mortality and morbidity globally, causing 35 million premature deaths annually (1). According to the World Health Organisation (WHO), over 1.7 million people die from diabetes mellitus each year (2), making it the fourth most deadly non-communicable disease (NCD). The burden of diabetes mellitus is increasing rapidly due to individual behaviours and lifestyle choices, particularly among individuals aged 40 years and above. The International Diabetes Federation (IDF) Atlas of 2021 reported that over 525 million individuals are living with type 2 diabetes mellitus (T2DM) (3). This rate was projected to increase by about 600 million by the year 2045.

The report revealed that the majority of the prevalence is found in developing nations, with over 75% of global type 2 diabetes cases occurring in individuals aged 40 years and above, with prevalence, disease duration, polypharmacy, and risk of microvascular and cardiovascular complications increasing sharply from midlife onward. In Kenya, the prevalence of diabetes mellitus has significantly risen from 3.3% in 2015 and projected to rise to 4.5% by the end of 2025, with a higher prevalence of about 10% in urban areas (4). Similarly, this study reported a higher burden among the elderly population, especially those aged 40 years or above. According to Shalaeva *et al*.(5), this age group represents a high-risk population in whom medication adherence is critical for preventing complications, reducing hospitalisations, and lowering premature mortality, particularly in low- and middle-income settings such as Kenya. Type 2 diabetes has been significantly associated with severe diabetes-related complications such as retinopathy, neuropathy, nephropathy, lower limb amputations, and cardiovascular diseases (6,7). According to Yosef *et al*.(8), a significant proportion of Type 2 diabetes patients face chronic complications attributed to poor glycemic control and poor medication behaviours and practices. Optimal adherence to anti-diabetic medication significantly promotes effective diabetes management, particularly in glycemic control and prevention of related complications. Despite its significant effectiveness in diabetes management, adherence to anti-diabetic medication among T2MD patients has remained suboptimal globally, particularly in low-and middle-income countries such as Kenya. This has been significantly associated with severe health outcomes such as a significant increase in complication risks, poor glycemic control and increased healthcare expenditure associated with advanced healthcare interventions and frequent hospitalisation (9,10). In Kenya, anti-diabetic medication adherence and its associated factors among T2MD patients are inadequately studied, particularly in Kericho County, resulting in limited empirical data vital to inform diabetes intervention. This study thus assessed antidiabetic medication adherence and its associated factors among T2DM patients aged 40 years and above in Kericho County.

Material and Methods

Study design and setting

This study adopted a facility-based cross-sectional study design conducted from December 2024 to February 2025, at Kericho County Referral Hospital (KCRH) located in Kericho County, Kenya. With a population that spans the entire county and beyond, from urban to rural areas, the facility is the biggest healthcare centre in the county, especially when it comes to diabetes management services. The study population comprised T2DM patients aged 40 and older years enrolled at the facility's diabetes clinic, particularly for anti-diabetic medication such as oral, injection or both. Participants who had been diagnosed with T2DM, enrolled and under medication at the facility for at least three months, and gave informed consent to participate in the study were included. The study excluded expectant women and those with critical medical conditions or who were mentally challenged.

Sample size and sampling

Andrew Fisher's formula was used to determine sample size, considering n=Z2pq/d2, where n represented targeted sample size, Z for 95% confidence interval, d for margin error of 5%, q for 1− p and p for unknown prevalence of medication adherence among T2DM patients, hence assumed to be 50%, which resulted in 384 patients (11). The correction formula (nf=No/1+No/N) was used to adjust the sample size to 220 patients, considering the diabetic clinic's informed estimate of 420 patients (less than 10,000) and 10% attrition. Study participants were selected using a systematic random sampling technique at a calculated interval of

two, based on a randomised list of patient attendance at the clinic. The first participant was randomly selected from the sampling frame, and if the selected patient was ineligible, the next patient was enrolled.

Data collection tools and procedure

Data was collected using validated structured questionnaires administered by trained researcher assistants. The questionnaires were pretested at Kapkatet Sub-County Referral Hospital using 22 participants, with Cronbach's alpha coefficient of 0.783. The questionnaires were comprised of three sections: socio-demographic characteristics, health-related information, and medication adherence. Anthropometric measurements such as height were measured using a stadiometer without shoes and caps, and weight was measured to the nearest 0.1 kg on a medical scale, with the subject wearing only one layer of clothes and no shoes. Body mass index (BMI) was calculated by dividing weight (kg) by height squared (m^2). Underweight was defined as BMI < 18.5 kg/m^2, normal weight as BMI between 18.5 kg/m^2 and 24.99 kg/m^2, overweight as BMI > 25 kg/m^2, and obesity as BMI ≥ 30 kg/m^2 (12). These criteria served as the basis for BMI cut-offs. Medication adherence was customised based on and evaluated using the four-item Morisky Medication Adherence Scale-4 (MMAS-4) (13). The section was participant self-reported regarding taking prescribed medication. It consisted of four questions of response (yes/no), where "Yes" options were rated as zero while "No" as one. In addition to MMAS-4, a Likert-rated question assessing medication forgetfulness frequency was also included, with "Never" response rated as zero, while "Always" was rated as four. Based on the score, adherence was categorised into high or optimal, medium, and low medication adherence. A score of 0 or 1 denotes high adherence, a score of 2 or 3 denotes medium adherence, and a score of 4 or more denotes low adherence (14).

Data quality assurance

A pretest was conducted at Kapkatet Sub-County Referral Hospital within Kericho County involving 21 participants three weeks before the main data collection. The data collectors were trained intensively for three days on questionnaire content, data collection methods, and ethical concerns. The reliability of the tool was evaluated at pretest (n = 21) and main study (n = 207) stages, which resulted in a Cronbach's alpha coefficient of 0.719 and 0.736, respectively. This indicated that the tool had good reliability. The questionnaire was translated into Kiswahili and back to English to ensure unbiased responses. The content of the questionnaire was intensively reviewed by senior experts in medicine, nutrition, public health, and pharmacy. This expert review team assessed content relevancy, clarity, and cultural appropriateness. The principal and co-investigators checked the completeness, consistency, and accuracy of collected data daily.

Data analysis

Collected data was coded, transformed and analysed using Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics such as frequency and percentages were used to summarise all variables. All independent variables were subjected to both bivariate and multivariate logistic regression models. Bivariate and multivariate logistic regression analyses were used to assess socio-demographic and health – related factors associated with adherence to medication. Associations were estimated using crude/unadjusted odds ratio (COR) and adjusted odds ratio (AOR), and a 95% confidence interval. A p-value of less than 0.05 was considered statistically significant.

Ethical consideration

The study obtained ethical approval from the Institutional and Scientific Review Board of the University of Eastern Africa, Baraton, and a permit from the National Commission for Science, Technology, and Innovation (NACOSTI/P/24/41338). Permission to conduct

the study at Kericho County Referral Hospital diabetic clinic was obtained from the hospital's administration. Written consent was obtained before data collection and privacy and confidentiality observed throughout the study.

Results

Socio–demographic characteristics

The response rate of 94.1% (n=207) was achieved, as some refused and incompletely filled questionnaires. The majority were aged 40-54 years (44.4%), were males (51.2%), attained secondary education (46.4%), were married (90.3%), were Christians (95.2%), and resided in rural settings (56.5%). Additionally, most of the participants were self – employed (54.1%), lived with at least five family members (60.9%), and had normal BMI (43.0%). (Table 1).

Health-related characteristics

Almost half of the respondents were diagnosed with DM in the previous 5 – 10 years (44.0%), 48.8% had co-morbidity, while 43.5% experienced diabetes related complication(s). The majority of the respondents were non-smokers (77.3%), did not consume alcohol (71.5%), had a family history of DM (59.9%), and received DM education/counselling (55.1%). (Table 2).

Adherence to medication among T2DM patients

Results from the Morisky Green Levine Medication Adherence scale revealed that the majority of the respondents forgot to take their diabetes pills/injections sometimes (60.9%), while more than half (55.6%) had missed diabetes medicine doses in the preceding two weeks.

Table 1

Socio–Demographic Characteristics of the Study Participants

Demographic variable		Frequency (n = 207)	Percentage (%)
Age (years)	40 – 54	92	44.4
	55 - 69	83	40.1
	≥ 70	32	15.5
Gender	Female	101	48.8
	Male	106	51.2
Education Level	No Formal Education	12	5.8
	Primary	31	15.0
	Secondary	96	46.4
	Tertiary/College	68	32.9
Marital Status	Married	187	90.3
	Divorced/Separated	11	5.3
	Widowed	9	4.3
Religion	Christians	197	95.2
	Muslims	10	4.8
Residence	Rural	117	56.5
	Urban	90	43.5
Employment Status	Unemployed	47	22.7
	Self – employed	112	54.1
	Formally employed	48	23.2
Family Members	≤ 5	126	60.9
	> 5	81	39.1
BMI	Underweight	31	15.0
	Normal	89	43.0
	Overweight	50	24.2
	Obese	37	17.8

Note: BMI = Body mass index

Table 2

Health-Related Characteristics of the Respondents

Health-related characteristics		Frequency (n = 207)	Percentage (%)
DM Period (years)	< 5	47	22.7
	5 – 10	91	44.0
	11 – 15	53	25.6
	> 15	16	7.7
Presence of co-morbidity	Yes	101	48.8
	No	106	51.2
Presence of complication (s)	Yes	90	43.5
	No	117	56.5
Smoking	Yes	47	22.7
	No	160	77.3
Alcohol consumption	Yes	56	28.5
	No	148	71.5
Family History	Yes	124	59.9
	No	83	40.1
Received DM education/counselling	Yes	114	55.1
	No	93	44.9

Note: DM = diabetes mellitus

Table 3

Patient-Reported Medication Adherence among T2DM Patients Assessed Using the Morisky Green Levine Medication Adherence Scale

Questions	Frequency (n)	Percentage (%)
Do you sometimes forget to take your diabetes pills? *		
Yes	126	60.9
No	81	39.1
Were there any days in the past two weeks when you did not take your diabetes medicine? *		
Yes	115	55.6
No	92	44.4
Do you ever stop taking your diabetes medication when you feel your condition is under control? *		
Yes	89	43.0
No	118	57.0
Do you ever feel hassled about sticking to your diabetes treatment plan? *		
Yes	146	70.5
No	61	29.5
How often do you have difficulty remembering to take all your medications? *		
Never	6	2.9
Rarely	90	43.5
Sometimes	64	30.9
Often	38	18.4
Always	9	4.3
Overall Adherence		
High	21	10.1
Moderate	155	74.9
Low	31	15.0

Note: *negatively worded question.

Furthermore, 43.0% stopped medication when they felt in control of diabetes, and 70.5% viewed sticking to their medication plan as a burden. Only 2.9% stated that they have never found it difficult to remember their medication. Overall, only 10.1% of the patients had high adherence, 74.5% had moderate adherence, and 25.0% had low adherence. (Table 3).

Table 4

Socio-Demographic Factors Associated with Optimal Medication Adherence among T2DM Patients

	Medication Adherence							
Variables	**High Adherence N (%)**	**Moderate-Low Adherence N (%)**	**COR**	**95% CI**	**p-value**	**AOR**	**95% CI**	**p-value**
Age (years)								
40 – 54	6 (2.9%)	86 (41.5%)	1.00	1.00	1.00	1.00	1.00	1.00
55 – 69	13 (6.3%)	70 (33.8%)	0.887	0.145-5.434	0.897	0.903	0.155-5.275	0.910
≥ 70	2 (1.0%)	30 (14.5%)	0.321	0.059-1.742	0.188	2.423	0.474-12.388	0.288
Gender								
Female	8 (3.9%)	93 (44.9%)	1.00	1.00	1.00	1.00	1.00	1.00
Male	13 (6.3%)	93 (44.9%)	0.393	0.133-0.965	0.012*	0.473	0.147-0.869	0.031*
Education Level								
No Formal Education	2 (1.0%)	10 (4.8%)	1.00	1.00	1.00	1.00	1.00	1.00
Primary	2 (1.0%)	29 (14.0%)	2.373	0.234-24.087	0.465	2.053	0.325-18.479	0.523
Secondary	10 (4.8%)	86 (41.5%)	1.842	0.288-11.803	0.519	1.762	0.284-9.562	0.614
Tertiary/College	7 (3.4%)	61 (29.5%)	2.591	1.303-14.007	0.046*	2.873	1.243-12.187	0.037*
Marital Status								
Married	18 (8.7%)	169 (81.6%)	1.00	1.00	1.00	1.00	1.00	1.00
Divorced/Separated	2 (1.0%)	9 (4.3%)	0.638	0.109-3.750	0.619	0.724	0.121-4.869	0.742
Widowed	1 (0.5%)	8 (3.9%)	1.622	0.142-18.557	0.697	1.732	0.156-19.69	0.676
Religion								
Christians	21 (10.1%)	176 (85.0%)	1.00	1.00	1.00	1.00	1.00	1.00
Muslims	0 (0.0%)	10 (4.8%)	1.785	0.356-8.949	0.481	1.983	0.257-8.930	0.462
Residence								
Rural	11 (5.3%)	106 (51.2%)	1.00	1.00	1.00	1.00	1.00	1.00
Urban	10 (4.8%)	80 (38.6%)	0.694	0.240-0.912	0.041*	0.549	0.217-0.986	0.027*
Employment Status								
Unemployed	3 (1.4%)	44 (21.3%)	1.00	1.00	1.00	1.00	1.00	1.00
Self–employed	13 (6.3%)	99 (47.8%)	0.406	0.097-1.693	0.216	0.546	0.136-2.539	0.427
Formally employed	5 (2.4%)	43 (20.8%)	0.318	0.055-0.848	0.022*	0.453	0.089-0.921	0.034*
Family Members								
≤ 5	11 (5.3%)	115 (55.6%)	1.00	1.00	1.00	1.00	1.00	1.00
> 5	10 (4.8%)	71 (34.3%)	1.422	0.025-79.327	0.864	1.315	0.162-61.122	0.783
BMI								
Underweight	7 (3.4%)	82 (39.6%)	1.00	1.00	1.00	1.00	1.00	1.00
Normal	5 (2.4%)	26 (12.6%)	0.591	0.070-0.927	0.018*	0.646	0.069-0.939	0.041*
Overweight	4 (1.9%)	46 (22.2%)	1.205	0.311-4.667	0.787	1.467	0.336-5.373	0.735
Obese	5 (2.4%)	32 (15.5%)	0.666	0.181-2.449	0.541	0.768	0.247-2.873	0.711

Note: 1.00 = reference category, aOR = adjusted odds ratio, asterisk (*) = statistically significant (< 0.05), BMI = body mass index, COR = crude odds ratio, CI = confidence interval, N = number/frequency

Socio-demographic factors associated with optimal medication adherence

The regression analysis revealed that male patients (AOR:0.473, 95% CI: 0.147-0.869, p = 0.031), urban residents (AOR: 0.549, 95% CI: 0.217-0.986, p = 0.027), formally employed patients (AOR: 0.453, 95% CI: 0.089-0.921, p = 0.034), and patients with normal BMI (AOR: 0.646, 95% CI: 0.069-0.939, p = 0.0141) were significantly less likely to adhere to medication. Moreover, higher education attainment (tertiary education) was significantly associated with higher odds of high medication adherence (AOR: 2.873, 95% CI: 1.243-12.187, p = 0.0437). (Table 4).

Health-related factors associated with optimal medication adherence

The multivariate logistic regression analysis revealed that patients with complications (AOR: 0.624, 95% CI: 0.256-0.835, p = 0.035) and who consumed alcohol (AOR: 0.418, 95% CI: 0.191-0.903, p = 0.027) were associated with lower odds of being optimally adherent to medication. Patients with a family history of diabetes (AOR: 2.513, 95% CI: 1.087-4.532, p = 0.019) and who received diabetes education (AOR: 2.394, 95% CI: 1.132-4.907, p = 0.016) had a higher likelihood of being optimally adherent to medication. (Table 5).

Table 5

Health – Related Factors Associated with Optimal Medication Adherence among T2DM Patients

	Medication Adherence							
Health-related factors	**High Adherence N (%)**	**Moderate-Low Adherence N (%)**	**COR**	**95% CI**	**p-value**	**AOR**	**95% CI**	**p-value**
DM Period (yrs)								
< 5	5 (2.4%)	42 (20.3%)	1.00	1.00	1.00	1.00	1.00	1.00
5 – 10	12 (5.8%)	79 (38.2%)	1.096	0.486-2.473	0.825	0.961	0.328-2.643	0.917
11 – 15	4 (1.9%)	49 (23.7%)	1.037	0.419-2.567	0.937	0.908	0.275-2.107	0.811
> 15	0 (0.0%)	16 (7.7%)	3.927	0.745-20.71	0.107	3.235	0.627-12.533	0.367
Co-morbidities								
No	13 (6.3%)	93 (44.9%)	1.00	1.00	1.00	1.00	1.00	1.00
Yes	10 (4.8)	93 (44.9%)	0.896	0.461-1.745	0.748	0.761	0.271-2.132	0.551
Presence of complication								
No	11 (5.3%)	106 (51.2%)	1.00	1.00	1.00	1.00	1.00	1.00
Yes	10 (4.8%)	80 (38.6%)	0.572	0.335-0.837	0.026*	0.624	0.256-0.835	0.035*
Smoking								
No	20 (9.7%)	140 (67.6%)	1.00	1.00	1.00	1.00	1.00	1.00
Yes	1 (0.5%)	46 (22.2%)	3.738	1.441-9.700	0.807	2.367	0.328-4.503	0.577
Alcohol consumption								
No	17 (8.2%)	131 (63.3%)	1.00	1.00	1.00	1.00	1.00	1.00
Yes	4 (1.9%)	55 (26.6%)	0.419	0.127-0.838	0.018*	0.418	0.191-0.903	0.027*
Family History								
No	12 (5.8%)	71 (34.3%)	1.00	1.00	1.00	1.00	1.00	1.00
Yes	9 (4.3%)	115 (55.6%)	2.987	1.527-5.844	0.001*	2.513	1.087-4.532	0.019*
Received DM education								
No	13 (6.3%)	80 (38.6%)	1.00	1.00	1.00	1.00	1.00	1.00
Yes	8 (3.9%)	106 (51.2%)	2.852	1.432-5.680	0.003*	2.394	1.132-4.907	0.016*

Note: 1.00 = reference category, aOR = adjusted odds ratio, asterisk (*) = statistically significant (< 0.05), CI = confidence interval, COR = crude odds ratio, DM = diabetes mellitus, N = number/frequency

Discussion

The study found that only 10.1% of the patients exhibited higher medication adherence, corroborating prior evidence reporting suboptimal adherence among individuals with T2DM (15,16). This trend triggers public health concerns regarding diabetes management, as Kenya reports a significant rise in the T2DM burden. Inadequate medication adherence undermines therapeutic effectiveness and compromises the prevention of morbidity, disability, and mortality associated with diabetes (8). Notably, the observed medication adherence level is almost three times lower than findings in Nairobi County, where at least two in every five T2DM patients highly adhered to medication (4). This variation emphasises healthcare system disparity in the country, resulting in disparities in healthcare access. Medication non-adherence is a preventable and modifiable public health issue, amendable through interventions like patient health education and provision of sustainable patient support systems. Therefore, there is a need for urgent intervention to address medication non-adherence among patients to prevent poor health outcomes and complications, as some studies have associated it with a significant increase in all-cause hospitalisation and mortality in older individuals, while optimal medication adherence significantly reduces long-term mortality risk by approximately 21% (17,18). Similarly, medication non-adherence contributes to poor glycemic control, which results in the development and severity of diabetes-related complications such as kidney failure, blindness, etc., which are preventable through optimal medication adherence.

The current study's findings challenge conventional medication adherence paradigms and emphasise the potential interplay of socio-cultural norms, economic pressures, the healthcare system and health-seeking behaviour in medication adherence. Similarly, a study in northern Bangladesh reported poorer male adherence attributed to gendered socio-cultural norms framing health-seeking and medication adherence as vulnerability (19). Consistently, studies have reported that despite the proximity of advanced healthcare infrastructures in urban settings, most patients face competition of needs and poor support systems, which results in poor adherence to medication (4,14). Urban residents often face lifestyle stressors which significantly hinder adherence and sustainable medication use. Similarly, poor medication adherence among formal employees is often due to rigid work schedules, and work-related pressure and constraints which interfere with timely and consistent medication use and health-seeking practice (20). Workplace-based interventions such as flexible clinic hours, employer-supported treatment breaks, and digital adherence reminders could mitigate this barrier. A study conducted in Japan reported that diabetic patients with normal BMI often underestimate their health risk perception, resulting in poor medication adherence behaviour (21). Individuals with normal BMI may perceive themselves as relatively healthy and therefore underestimate their vulnerability to disease progression, leading to lower perceived necessity of strict medication adherence. This phenomenon aligns with the Health Belief Model, which posits that lower perceived severity and susceptibility reduce adherence behaviours (22). In contrast, underweight patients may exhibit visible frailty and heightened illness perception, prompting closer clinical monitoring and stronger adherence behaviours. Higher education was associated with optimal medication adherence. This finding echoes results by other studies that reported optimal medication adherence among patients with higher educational attainment, which is attributed to higher health literacy (4,18). These findings reveal an urgent need for innovative and inclusive patient-centred medication interventions focused on increasing optimal

medication adherence among diabetic and other chronic illness patients.

The study found that patients with complications and who consumed alcohol were less likely to optimally adhere to medication compared to those without complications and who did not consume alcohol. These findings corroborate with studies conducted in northern Bangladesh and Kenya, which reported that diabetic complications often interfered with medication adherence (4,17). Frequent diabetes related complications such as cardiovascular disorders and retinopathy may contribute to demotivation, medication fatigue and projected psychological distress, which may interfere with consistency of medication use and disrupted adherence behaviours. Diabetic patients with complications are more likely to experience polypharmacy and medication regimen complexity, which has been associated with higher odds of forgetfulness, intentional medication non-adherence and erratic dosage (5). This has also been attributed to perceived medication burden and/or side effects. Consistently, previous studies have reported higher odds of poor medication adherence among diabetic patients who consumed alcohol (4,16). This was attributed to the fact that alcohol significantly results in cognitive disruption and adverse interactions with antidiabetic medication, which contribute to forgetfulness, intoxication or intentional skipping of doses. According to Mirahmadizadeh *et al*.(14), patients who consume alcohol often engage in riskier health behaviours, which may result in poor medication adherence, particularly among those with chronic diseases. Finally, the current study revealed that patients with a family history of diabetes who received diabetes education had a higher likelihood of being optimally adherent to medication. Previous studies strongly support this finding, as they have significantly associated family history with increased awareness and vigilance, hence motivating optimal medication adherence due to exposure to firsthand consequences of poor medication adherence (23–25). According to Dórea *et al*.(6), familial history raises disease literacy, disease management skills and a greater support system, which promotes consistent and sustainable medication uptake. Exposure to such education enhances patients' self-efficacy and behavioural reinforcement approaches that ensure sustainable optimal medication adherence. These findings highlight the need for integration of mental health support systems and continuous family-centred care approaches and education to diabetes interventions.

Study Limitations

The study findings might have limited generalizability to broader population since it was conducted in a single healthcare facility. The study adopted self-reported evaluation of medication adherence, which might have introduced social desirability and recall bias to the study, affecting the outcomes of the study. The wide confidence interval observed for households with more than five members indicates limited estimate precision, likely due to small subgroup size and reduced statistical power. Similarly, the study did not assess potential confounders such as medication side effects and the mental health status of the participants, which might have influenced the study findings.

Conclusion

The study found alarmingly low levels of optimal adherence to antidiabetic medication among the patients in Kericho County. Sociodemographic and health-related factors were significantly associated with medication adherence among patients. Family history of diabetes and exposure to education or counselling improved adherence.

Recommendations

These findings underscore the need for culturally sensitive, patient-centered education and support interventions to strengthen adherence

and reduce diabetes-related complications amid the rising T2DM burden in Kenya and beyond.

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