

Prevalence and Determinants of Compliance to Scheduled Clinical Visits among Diabetic Patients at Bungoma County Referral Hospital, Kenya

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ABSTRACT

Diabetes mellitus is a major global public health concern, characterized by chronic hyperglycaemia resulting from defects in insulin secretion, insulin action, or both. Effective management of diabetes requires continuous medical care, including regular monitoring and adherence to scheduled clinical visits. These visits are essential for glycaemic control, early detection of complications, treatment adjustments, and patient education. Non-compliance with scheduled clinical visits among diabetic patients contributes to poor glycaemic control and increased complications. To assess the prevalence and determinants of compliance among diabetic patients at Bungoma County Referral Hospital. A cross-sectional study was conducted among 64 diabetic patients selected using systematic random sampling. Data were collected using structured questionnaires and analysed using descriptive statistics and chi-square tests. Overall, 54.7% of participants were compliant, 26.6% partially compliant, and 18.8% non-compliant. Patient-related factors showed no statistically significant association ($p=0.054$), while hospital-related factors were significantly associated with compliance ($p=0.029$). Compliance to scheduled clinical visits remains suboptimal and is influenced by health system factors. Interventions targeting healthcare delivery and patient support are recommended.

KEYWORDS

Diabetes, Compliance, Clinical visits, Kenya, Adherence

I. INTRODUCTION

Diabetes mellitus is a major global public health concern, characterized by chronic hyperglycaemia resulting from defects in insulin secretion, insulin action, or both. The prevalence of diabetes has been increasing rapidly, particularly in low- and middle-income countries, including Kenya. This rising burden poses significant challenges to healthcare systems due to associated complications such as cardiovascular disease, neuropathy, nephropathy, and retinopathy.

Effective management of diabetes requires continuous medical care, including regular monitoring and adherence to scheduled clinical visits. These visits are essential for glycemic control, early detection of complications, treatment adjustments, and patient education. However, non-compliance with scheduled clinic appointments remains a major barrier to optimal diabetes management and is associated with poor health outcomes, increased hospitalizations, and higher healthcare costs.

Several factors influence compliance with clinical visits, including patient-related factors (such as knowledge, attitudes, and socio-demographic characteristics), health system factors (such as accessibility, waiting time, and quality of care), and socio-economic factors (including financial constraints and social support). In resource-limited settings, these challenges are often exacerbated by inadequate healthcare infrastructure and limited access to essential services.

Despite the growing burden of diabetes in Kenya, there is limited empirical evidence on the extent of compliance with scheduled clinical visits and the factors influencing it, particularly at the county level. Understanding these determinants is critical for designing targeted interventions to improve adherence and overall disease management.

Therefore, this study aimed to assess the prevalence and determinants of compliance with scheduled clinical visits among diabetic patients at Bungoma County Referral Hospital, Kenya.

II. MATERIALS AND METHODS

A. Study Design and Setting

A hospital-based cross-sectional study was conducted at Bungoma County Referral Hospital, located in Bungoma County, Kenya. The facility serves as the main referral hospital in the region and provides specialized care, including diabetes management services.

B. Study Population

The study population comprised adult patients diagnosed with diabetes mellitus and attending outpatient clinics at the hospital during the study period.

C. Inclusion and Exclusion Criteria

Patients aged 18 years and above, diagnosed with diabetes mellitus, and attending scheduled clinic visits during the study period were included. Patients who were critically ill or unwilling to provide informed consent were excluded from the study.

D. Sample Size Determination

The sample size was determined using Slovin's formula, assuming a known population size and a margin of error of 5%. A total of 64 participants were included in the study.

E. *Sampling Technique*

Systematic random sampling was used to select study participants. Every kth patient attending the clinic was recruited until the desired sample size was achieved.

F. *Data Collection Methods*

Data were collected using a structured questionnaire administered through face-to-face interviews. The questionnaire captured information on socio-demographic characteristics, patient-related factors, hospital-related factors, and home-based factors influencing compliance.

G. *Study Variables*

- Dependent Variable: Compliance with scheduled clinical visits (categorized as compliant, partially compliant, and non-compliant).
- Independent Variables:
- Patient-related factors (e.g., knowledge, attitudes, socio-demographic characteristics)
- Hospital-related factors (e.g., service quality, waiting time, satisfaction)
- Home-based factors (e.g., distance to facility, social support, financial constraints)

H. *Data Analysis*

Data were entered and analysed using statistical software. Descriptive statistics (frequencies and percentages) were used to summarize the data. Associations between variables were assessed using the Chi-square (χ^2) test. Statistical significance was set at $p < 0.05$.

I. *Ethical Considerations*

Ethical approval was obtained from the Institutional Review Board of the University of Eastern Africa, Baraton. Permission to conduct the study was granted by Bungoma County Referral Hospital. Written informed consent was obtained from all participants prior to data collection, and confidentiality of the information was maintained throughout the study.

III. **RESULTS**

A. *Compliance to Scheduled Clinical Visits*

The level of compliance among diabetic patients is presented in Table 1. Overall, 54.7% of the participants were compliant with scheduled clinical visits, 26.6% were partially compliant, and 18.8% were non-compliant.

Table 1. Compliance levels among diabetic patients (n = 64)

Compliance Level	Frequency (n)	Percentage (%)
Non-compliant	12	18.8
Partially compliant	17	26.6

Compliant	35	54.7
Total	64	100.0

B. Patient-Related Factors and Compliance

The association between patient-related factors and compliance is shown in Table 2. There was no statistically significant association between patient-related factors and compliance with scheduled clinical visits ($\chi^2 = 12.371$, $df = 6$, $p = 0.054$), although the results were marginally close to significance.

Table 2. Association between patient-related factors and compliance

Test	Value	df	p-value
Pearson Chi-square	12.371	6	0.054
Likelihood Ratio	14.951	6	0.021

C. Hospital-Related Factors

Patient satisfaction with hospital care is presented in Table 3, where 65.6% of respondents reported being satisfied with the services provided, while 34.4% were not satisfied.

Table 3. Patient satisfaction with hospital care (n = 64)

Satisfaction Level	Frequency (n)	Percentage (%)
Satisfied	42	65.6
Not satisfied	22	34.4
Total	64	100.0

The association between hospital-related factors and compliance is shown in Table 4. A statistically significant association was observed ($\chi^2 = 9.023$, $df = 3$, $p = 0.029$), indicating that hospital-related factors significantly influenced compliance with scheduled clinical visits.

Table 4. Association between hospital-related factors and compliance

Test	Value	df	p-value
Pearson Chi-square	9.023	3	0.029
Likelihood Ratio	8.783	3	0.032

D. Use of Herbal Medication

As shown in Table 5, 26.6% of participants reported using herbal medicine, while 73.4% did not. This indicates that a notable proportion of patients rely on alternative treatment options alongside conventional care.

Table 5. Use of herbal medicine among participants (n = 64)

Response	Frequency (n)	Percentage (%)
Yes	17	26.6
No	47	73.4
Total	64	100.0

E. Distance to Health Facility

The distribution of participants by distance to the health facility is presented in Table 6. Most participants resided within 2.5–5 km (34.4%), while others lived farther away, with 23.4% residing 20–30 km from the facility. Increased distance may present a barrier to regular clinic attendance.

Table 6. Distance from residence to health facility (n = 64)

Distance (km)	Frequency (n)	Percentage (%)
2.5 – 5	22	34.4
5 – 10	12	18.8
10 – 20	15	23.4
20 – 30	15	23.4
Total	64	100.0

F. Social Support

Social support among participants is presented in Table 7. Most married participants reported having social support (69.2%), while widowed participants predominantly lacked support (18.4%). Social support may play a role in influencing healthcare-seeking behaviour and compliance

Table 7. Social support among participants

Category	With Support n (%)	No Support n (%)
Married	45 (69.2)	0
Widowed	0	12 (18.4)
Single	4 (6.1)	4 (6.1)

IV. DISCUSSION

This study assessed the prevalence and determinants of compliance with scheduled clinical visits among diabetic patients at Bungoma County Referral Hospital. The findings indicate that just over half of the participants were compliant, while a considerable proportion were either partially compliant or non-compliant. This suggests that adherence to routine clinical follow-up remains suboptimal, which may compromise effective diabetes management and increase the risk of complications. The study found no statistically significant association between patient-related factors and compliance, although the results were marginally close to significance. This may imply that while individual characteristics such as knowledge, attitudes, and socio-demographic factors play a role, they may not be the primary drivers of adherence in this setting. Similar findings have been reported in other low-resource settings where structural barriers tend to outweigh individual-level determinants.

In contrast, hospital-related factors were significantly associated with compliance, highlighting the critical role of the healthcare system in influencing patient behaviour. Factors such as quality of care, waiting time, availability of services, and patient-provider interactions may affect patients' willingness and ability to attend scheduled appointments. These findings underscore the need to strengthen health system responsiveness and improve patient-centred care to enhance adherence. A notable proportion of participants reported using herbal medicine, indicating the coexistence of traditional and modern treatment practices. This may affect compliance with scheduled clinical visits, as patients who rely on alternative therapies may delay or miss appointments. Integrating culturally sensitive health education into routine care could help address misconceptions and promote adherence to medical recommendations.

Distance to the health facility was also identified as a potential barrier, with a significant number of participants residing far from the hospital. Long travel distances and associated costs may discourage regular attendance, particularly among patients with limited financial resources. This highlights the importance of decentralizing diabetes care services and strengthening community-based follow-up systems. Social support emerged as another important factor, with married participants more likely to report having support compared to their widowed or single counterparts. Social support can facilitate adherence by providing emotional encouragement, financial assistance, and logistical help in accessing healthcare services.

Overall, the findings of this study emphasize that compliance with scheduled clinical visits is influenced more by health system and socio-environmental factors than by individual characteristics alone. Addressing these barriers requires a comprehensive approach that includes improving healthcare service delivery, enhancing accessibility, and promoting patient support mechanisms.

A. *Strengths and Limitations*

One of the strengths of this study is that it provides context-specific evidence on compliance among diabetic patients in a county referral hospital setting. However, the study was limited by its cross-sectional design, which does not allow for causal inferences. Additionally, reliance on self-reported data may have introduced recall or social desirability bias.

V. CONCLUSION

Compliance with scheduled clinical visits among diabetic patients at Bungoma County Referral Hospital was found to be suboptimal, with a considerable proportion of patients either partially compliant or non-compliant. The study demonstrates that hospital-related factors, including quality of care and service delivery, play a significant role in influencing patient compliance, while patient-related factors showed no statistically significant association. Additionally, barriers such as long distances to the health facility, use of alternative therapies, and limited social support may further hinder adherence to scheduled visits. These findings highlight the need for health system strengthening, improved accessibility of services, and enhanced patient support mechanisms.

Targeted interventions focusing on improving healthcare delivery, decentralizing services, and promoting patient-centred care are essential to enhance compliance and ultimately improve diabetes management outcomes.

VI. DECLARATIONS

A. Funding

No funding was received for this study.

B. Conflicts of Interest

The authors declare no conflict of interest.

C. Ethical Approval

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Institutional Review Board of the University of Eastern Africa, Baraton (Approval No: B12394312025).

D. Informed Consent

All participants were informed about the purpose of the study, and written informed consent was obtained prior to participation. Participation was voluntary, and confidentiality and anonymity were strictly maintained throughout the study.

E. Data Availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed:

- Strengthen healthcare service delivery; Healthcare facilities should improve service efficiency by reducing waiting times, ensuring consistent availability of essential services, and enhancing patient-provider interactions to promote a positive care experience.
- Enhance patient education and counselling; Regular health education sessions should be provided to improve patients' understanding of diabetes management and the importance of adhering to scheduled clinical visits.
- Decentralize diabetes care services; expanding diabetes services to lower-level health facilities and community settings can reduce travel distance and improve access to care.
- Promote community and social support systems; Community-based support groups and family involvement should be encouraged to enhance adherence through emotional and practical support.
- Address use of alternative therapies; Healthcare providers should engage patients in open discussions about the use of herbal medicine and provide culturally sensitive guidance to ensure safe and coordinated care.
- Improve financial accessibility; Strategies such as subsidized care, insurance coverage, and transport support should be considered to reduce financial barriers to attending clinic appointments.

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