



Medication Adherence and Its Relationship with Glycaemic Control Among Ambulatory Patients with Type 2 Diabetes Mellitus: A Cross-sectional Study in A Primary Care Clinic of a Nigerian Tertiary Hospital

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Abstract

Background: Achieving target glycaemic control relies heavily on how strictly patients adhere to their prescribed medications, a universal reality for those managing type 2 diabetes mellitus. Maintaining this metabolic balance is the primary defence against the micro and macrovascular complications associated with the disease. This research evaluates the impacts of medication adherence on glycaemic control among patients seeking care at the General Outpatient Clinic of the Federal Medical Centre, Gusau.

Methods: We conducted a hospital-based cross-sectional analysis focusing on adult patients aged 18 and above diagnosed with type 2 diabetes mellitus over a 12-week time frame. A systematic random sampling technique was utilized to select roughly 120 individuals. Two incomplete questionnaires were excluded and 118 completed data of the respondents was analysed. To measure treatment adherence, we deployed the 8-item Morisky Medication Adherence Scale, while an Infopia Clover A1C analyser was used to measure HBA1C of the respondents.

Results: Females respondents constituted the bulk of our cohort at 80 participants (67.8%), and the dominant age bracket was 45 to 64 years, representing 77 participants (66.9%). Among those demonstrating strong adherence to their drug therapy, 35 individual (72.9%) successfully maintained adequate glycaemic control. Conversely, 13 individuals (54.2%) of those who poorly adhered to their prescriptions exhibited inadequate glycaemic control. Statistical analysis confirmed a meaningful, direct relationship between medication adherence and glycaemic control ($p = 0.014$).

Conclusion: This study established a positive correlation connecting strict medication adherence with glycaemic control within the the study population.

Keywords: Type 2 diabetes, Glycaemic control, Medication adherence.

Background

Globally, diabetes mellitus stands as a predominant endocrine condition, and its frequency is increasing rapidly across developing nations.^{1,2} Fundamentally, it involves chronic high blood sugar driven by impaired insulin production, flawed insulin utilisation, or a combination of both.³ By 2021, estimates suggested that 536.6 million individuals were living with this disease worldwide, a figure expected to rise to 783.2 million by 2045.¹ The vast majority of these patients reside in regions classified as low- to middle-income countries. Strikingly, Sub-Saharan Africa accounts for roughly 77% of global mortalities tied to this condition, predominantly claiming the lives of those under 60 years of age.⁴

When it comes to chronic diseases like diabetes mellitus, sticking to a prescribed pharmacological routine is universally acknowledged as a primary determinant of therapeutic success.⁵ The World Health Organisation emphasises that amplifying adherence rates could yield more substantial public health benefits than merely inventing new medical treatments.⁶ After all, even the most innovative drugs remain ineffective if patients fail to take them correctly. Consistently following a treatment plan in people living with type 2 diabetes mellitus is vital for warding off micro- and macrovascular complications, lowering overall medical costs, and ultimately boosting the patient's daily quality of life.^{7,8}

Despite this reality, adherence to long-term pharmacological therapies remains distressingly low in developing countries. Patients frequently abandon their regimens due to a false sense of wellness, irregular clinic visits, reliance on traditional herbal remedies, forgetfulness, adverse drug reactions, or economic hardship. This failure to maintain type 2 diabetes mellitus treatment protocols directly fuel disease progression, spikes healthcare spending, diminishes well-being, and elevates mortality rates among diabetic populations.^{5,9,10,11}

A complex web of elements dictates how well a diabetic patient follows their medication schedule, encompassing social, economic, patient-specific, systemic, and therapy-related variables. Inadequate adherence serves as the primary barrier to reaching optimal glycaemic target, thereby inviting severe micro and macrovascular complications.⁹ Alarming, an estimated **45%** of individuals with type 2 diabetes failed to attained glycaemic targets strictly because they do not take their medications as instructed.¹² The cornerstone of managing this disease is establishing tight glycaemic control, which dramatically cuts down micro and macrovascular risks and enhances overall lifestyle quality.¹³

Previous cross-sectional studies—such as those from a multicentre analysis in Northwest Ethiopia and a descriptive study at a tertiary facility in South-South Nigeria—have established that robust medication adherence closely aligns with better glycaemic control.^{14,15} However, a significant portion of the existing literature predominantly explores the *barriers* to adherence rather than its direct clinical outcomes. To bridge this gap, the current research specifically examines the correlation between medication adherence and glycaemic control within the type 2 diabetes mellitus patients at the General Outpatient Clinic of the Federal Medical Centre in Gusau.

Materials and Methods

Study Setting

We conducted this research at the General Outpatient Clinic within the Federal Medical Centre, Gusau. Established on October 1, 1996, during General Sani Abacha's administration, the facility serves Gusau, the capital of Zamfara State. The local demographic heavily features agricultural workers, miners, and entrepreneurs, alongside a segment of civil servants.

Study Design The research utilised a hospital-based, cross-sectional analytical framework.

Sample Size Determination

We calculated the necessary participant sample size utilizing the standard formula for cross-sectional studies:

$$n = \frac{Z^2 pq_{10}}{d^2}$$

Where:

- n represents the target sample size.
- Z stands for the standard normal deviate at a 95% confidence interval (1.96).
- p denotes the anticipated prevalence of good adherence, estimated at 9.5% (0.095), drawing from prior literature regarding family support and diabetic therapy.¹¹
- q is the complementary probability ($1 - p$).

- d signifies the margin of error, set at 0.05.

Substituting these values:

$$n = \frac{(1.96)^2 \times 0.095 \times (1 - 0.095)}{(0.05)^2}$$

This yielded an initial requirement of 132 individuals. Because our accessible sampling frame (N) over the study period was 600—well under 10,000—we adjusted the figure using the finite population correction formula:

$$n_f = \frac{n}{1 + (n/N)}^{10}$$

This calculation ($n_f = \frac{132}{1 + (132/600)}$) brought the required total down to approximately 108.1, rounded to 109. Factoring in a **10%** contingency for potential non-responses (10.9), our final target became 119.9, prompting us to recruit 120 participants.

Sampling Technique

A systematic random sampling approach was deployed to recruit the 120 eligible individuals. The clinic records indicated an average daily influx of 10 patients with type 2 diabetes mellitus, translating to 50 weekly and 600 over the entire 12-week study duration. We established a sampling interval (K) by dividing the expected total by the required sample size ($600/120 = 5$). Consequently, we engaged every fifth patient. The initial subject was chosen via simple balloting among the first five arrivals; five scrolled papers (one reading "Yes," four reading "No") were presented, and the patient drawing "Yes" became the first participant. Subsequent candidates were selected at intervals of five. Selected patient files were tagged with stickers at the end of each session to prevent double-counting. If a chosen patient declined to participate, the next eligible person was recruited until the quota was fulfilled.

Data Collection Instruments

Our toolkit included a pre-tested, semi-structured questionnaire, which was translated into Hausa and subsequently back-translated into English to ensure linguistic accuracy. Anthropometric measurements were obtained using a Seca stadiometer and weighing scale, both manufactured in Germany. We utilised Chinese-manufactured syringes, needles, and EDTA bottles for blood collection. Blood analysis was conducted via a South Korean Clover HbA1C machine (Infopia).

Procedure

Two specially briefed research assistants supported the principal investigator. Research Assistant 1, a registered nurse, handled the initial screening to exclude emergency cases and recorded vital statistics, including height, weight, BMI, and blood pressure. Research Assistant 2, a medical laboratory scientist, managed venepuncture, sample transport, and the HbA1c laboratory testing. The lead researcher oversaw the entire workflow, administering the questionnaires to capture clinical and demographic data primarily in Hausa, utilising English only for non-Hausa speakers.

Adherence and Glycaemic Measures

Medication adherence was measured using the 8-item Morisky Medication Adherence Scale (MMAS-8), a highly regarded self-reporting instrument reflecting the patient's behaviour over the

preceding two weeks. It features seven binary (yes/no) questions—where "yes" equals 1 point and "no" equals 0 points—and one 5-point Likert scale item ranging from "never" to "always". On the Likert item, "never" scores 1 point, while other responses score 0. Total scores range from 0 to 8: a perfect 8 reflects strict adherence, 6 to 7 denotes moderate adherence, and 0 to 5 flags poor adherence. The tool has strong internal consistency, evidenced by a Cronbach's alpha of 0.7. For blood sugar control, an HbA1c reading below 7% was classified as good glycaemic control, whereas HbA1c above 7% was regarded as poor glycaemic control.

Data Processing: During the data cleaning of the research process before data analysis, there were two incomplete questionnaires of the respondents that was observed. Hence, these two incomplete questionnaires were excluded but the completed data of 118 respondents were analysed.

Data Analysis

Statistical processing was handled via IBM SPSS version 23. Descriptive statistics (frequencies, percentages, means, and standard deviations) summarized the sociodemographic and clinical profiles. Chi-square testing evaluated the association between medication adherence levels and glycaemic control, utilising a standard significance threshold of $p < 0.05$.

Ethical Consideration

The Research and Ethics Committee of the Federal Medical Centre, Gusau, granted formal approval. All participants provided informed consent after being assured of strict confidentiality and their absolute right to exit the study at any time without penalty.

Results

Sociodemographic Characteristics

As detailed in Table 1, the socio-demographic characteristics of the study participants consisted of individuals between 45 and 64 years of age, heavily skewed towards the female gender. Household sizes predominantly ranged from 1 to 10 individuals. A substantial portion of the cohort reported receiving active support from their relatives, which frequently included being escorted to their medical follow-ups.

Clinical Characteristics

Table 2 outlines the clinical parameters. A vast majority of respondents had carried their diabetes diagnosis for over a year and were primarily managing their condition with oral glucose-lowering drugs.

Medication Adherence Levels

The data revealed that **40.7%** (48 individuals) strictly followed their medication regimens. Meanwhile, 46 individuals (**39.0%**) demonstrated moderate adherence, and the remaining 24 individuals (**20.3%**) fell into the poor adherence category.

Glycaemic Control Parameters

Evaluation of the glycaemic control via the Clover A1C analyser showed that 67 participants (**56.8%**) successfully maintained target glycaemic control, leaving 51 participants (**43.2%**) with inadequate control. Notably, the bulk of those who reliably took their medications achieved optimal

blood glucose control, whereas more than half of those exhibiting poor control were concurrently failing to adhere to their medications.

Table 1: Sociodemographic Profile of Study Participants

Variable	Frequency	Percentage (%)
Age (Years)		
≤ 44	29	24.6
45–64	79	66.9
>65	10	8.5
Gender		
Female	80	67.8
Male	38	32.2
Ethnicity		
Hausa	102	86.4
Yoruba	1	0.8
Igbo	10	8.6
Others	5	4.2
Religion		
Islam	107	90.7
Christianity	11	9.3
Highest Education Level		
No Formal Education	41	34.7
Primary Education	15	12.7
Secondary Education	19	16.1
Tertiary Education	43	36.5
Estimated Monthly Income		
< 30,000 Naira	72	61
> 30,000 Naira	46	39
Household Size		
1–10 Members	76	64.4
11–20 Members	32	27.1
≥ 21 Members	2	1.7

Table 2: Clinical Parameters of the Respondents

Variable	Frequency	Percentage (%)
Family Support at Home		
Yes	91	77.1
No	27	22.9
Accompanied to Clinic (Past 3 Visits)		
Yes	34	28.8
No	84	71.2
Time Since Diagnosis		
Under One Year	5	4.2
Exactly One Year	6	5.1
Over One Year	107	90.7

Current Treatment Plan		
Oral Medications Only	115	97.5
Oral Medications + Insulin	3	2.5
Body Mass Index (BMI)		
Underweight	2	1.7
Normal Weight	31	26.3
Overweight	40	33.9
Obese	45	38.1
Blood Pressure Control		
Well Controlled	62	52.5
Poorly Controlled	56	47.5

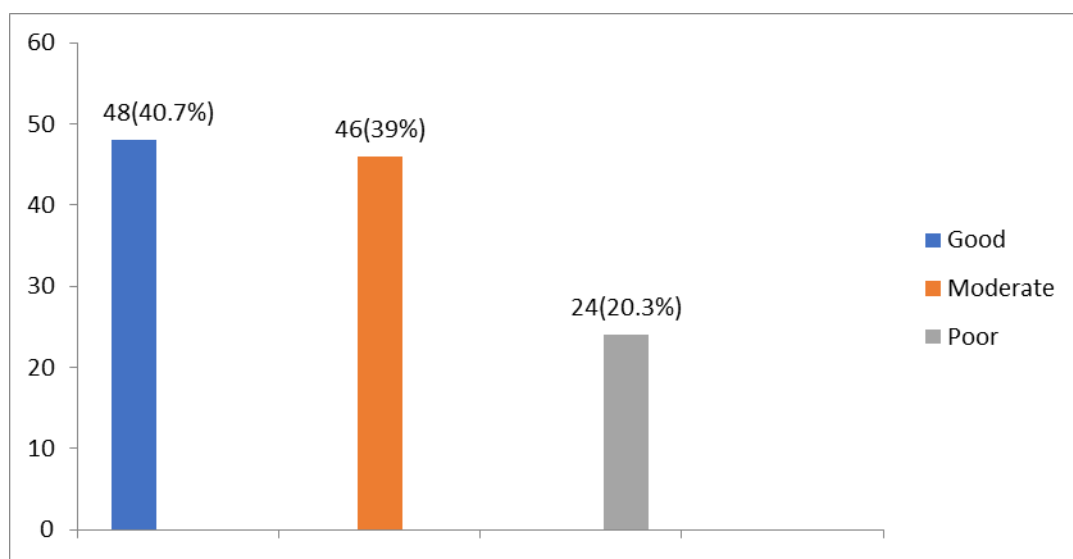


Figure 1: The level of Medication Adherence of the respondents

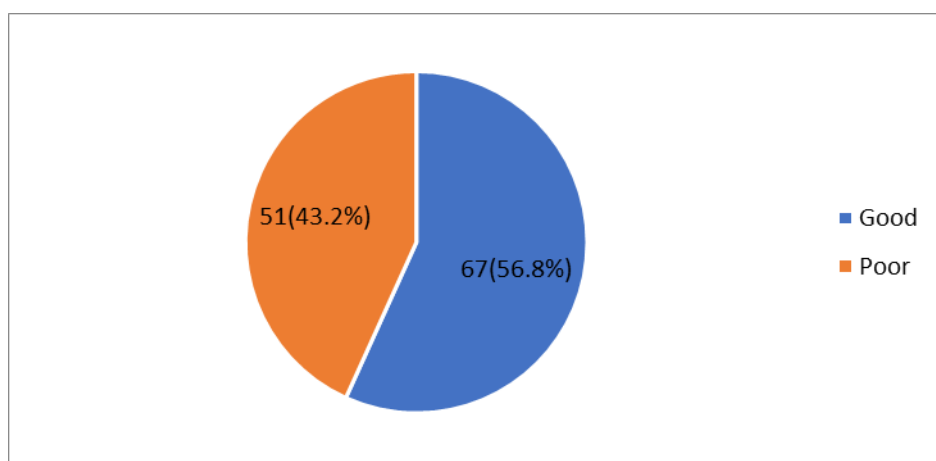


Figure 2: The level of glycaemic control of the respondents.

Table 3: Association Between Medication Adherence and Glycaemic Control

Medication Adherence	Good Glycaemic Control n (%)	Poor Glycaemic Control n (%)	Statistical Test
Good	35 (72.9)	13 (27.1)	$\chi^2 = 8.586$

Moderate	21 (45.7)	25 (54.3)	
Poor	11 (45.8)	13 (54.2)	P = 0.014

Discussion

The mean age of the study participants was 51.68 ± 8.88 . This age distribution mirrors the demographic patterns reported by Aymen et al.,¹⁶ driven by underlying similarities in the studied populations. Females' respondents significantly outnumbered males in our study, an observation that strongly echoes the findings of Nnenna et al. regarding type 2 diabetics in South-Western Nigeria.¹⁷ This consistent gender disparity in clinic attendance is widely attributed to women generally exhibiting more proactive health-seeking behaviours than men.

Therapeutically, an overwhelming majority of our participants relied solely on oral hypoglycaemic agents, with only a marginal fraction incorporating insulin into their daily routine regimen. This aligns perfectly with Ashebir et al.'s Ethiopian study and Azeez et al.'s Nigerian research, both of which noted a heavy reliance on oral hypoglycaemic agents.^{18,19} The preference for oral medications in these demographics is largely due to the patients' retained capacity for endogenous insulin production.

Regarding their anthropometric parameters, over a third of the respondents were classified as obese, supplemented by a notable proportion of overweight individuals. This corresponds directly with the documentation by David and Sada et al., who highlighted rampant obesity and overweight among Nigerian individuals suffering from type 2 diabetes mellitus.^{20,21}

When evaluating treatment adherence, less than half of our subjects (**40.7%**) were classified as highly adherent, **39.0%** were moderately adherent, and roughly a fifth (**20.3%**) demonstrated poor adherent. These exact proportions closely parallel Ping et al.'s findings in China, likely because both investigations deployed a cross-sectional approach and utilised the exact same measuring tool (MMAS-8).^{22,23} Conversely, our respondents showed noticeably better adherence than the population studied by Muhammad et al. in Dubai, where optimal adherence was remarkably scarce.²⁴ Our results also resonate with a primary care study in Gaza, Palestine, by Aymen et al.,¹⁶ which reported comparable strata of good, moderate, and poor adherence using similar methodological tools. However, our patients performed vastly better than those in Nahid et al.'s Saudi Arabian study, which documented a staggering rate of low adherence among their diabetic population.²⁵

On the glycaemic control, **56.8%** of the assessed individuals successfully achieved satisfactory blood glucose control, compared to **43.2%** with poor glycaemic control. This success rate is highly consistent with observations from primary care clinics in both Eastern and North-Western Nigeria, which similarly reported a predominance of good glycaemic control among their attendees.^{26,27} Comparable favourable outcomes were also documented in retrospective and cross-sectional studies emerging from South-Western and South-Eastern Nigeria.^{15,28} In stark contrast, our figures diverge sharply from a North-West Ethiopian multicentre study and Osuji et al.'s findings, both of which recorded a grim majority of patients failing to hit their requisite glycaemic targets.^{14,29}

Crucially, our cross-tabulation confirmed that strict medication adherence significantly correlate with glycaemic control, as those failing to take their drugs properly disproportionately suffered from poor glycaemic control. This fundamental link is heavily supported by retrospective data from

300 patients in Southern Nigeria, showing a clear connection between adherence and clinical outcomes of the disease.³⁰ Furthermore, a cross-sectional evaluation at a Federal Medical Centre in South-Eastern Nigeria noted that an impressive **91.9%** of highly adherent patients reached optimal glycaemic target, while those failing to adhere universally showed poor glycaemic control.¹⁵ Ethiopian hospital data and a comprehensive Malaysian study involving 386 type 2 diabetic patients further validate this correlation, repeatedly proving that suboptimal pill-taking inevitably derails glycaemic control.³¹

Ultimately, neutralizing the socio-economic, systemic, and patient-specific hurdles to medication adherence is entirely non-negotiable if healthcare systems aim to secure optimal glycaemic control in diabetic populations.

Conclusion

This study provides concrete evidence that rigorous adherence to prescribed anti-diabetic medications directly translates to good glycaemic outcomes among the evaluated patient demographic.

Recommendations

The findings mandate that clinical practitioners prioritise the routine evaluation of treatment adherence as a core component of standard outpatient visits to safeguard type 2 diabetics patient health. Actively dismantling barriers to adherence—whether they stem from financial strain, adverse drug side effects, or ingrained cultural misconceptions—is essential for achieving therapeutic success. Furthermore, integrating targeted, structured educational programs that explicitly connect medication adherence with glycaemic control will empower patients to take charge of their metabolic health.

Limitations of the Study

Given its cross-sectional architecture, this research merely captures a singular snapshot in time. Consequently, while it strongly identifies a statistical correlation, it cannot definitively prove a longitudinal cause-and-effect relationship between medication adherence and glycaemic control.

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Data availability

No datasets were generated or analyzed during the current study.

Declarations

Ethics approval and consent to participate

Not applicable. This study did not involve human or animal subjects.

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Competing interests

The authors declare that they have no competing interests.

References

- Guariguata L, Whiting DR, Hambleton I, Beagley J, Linnenkamp U, Shaw JE. Global estimates of diabetes prevalence for 2013 and projections for 2035. *Diabetes Research and Clinical Practice*. 2014;103(2):137-149.
- Lovic D, Piperidou A, Zografou I, Grassos H, Pittaras A, Manolis A. The growing epidemic of diabetes mellitus. *Current Vascular Pharmacology*. 2020;18(2):104-1049.
- American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care*. 2014;37(Suppl 1): S81-90.
- Dessie G, Mulugeta H, Amare D, Negesse A, Wagnew F, Getaneh T, et al. A systematic analysis on prevalence and sub-regional distribution of undiagnosed diabetes mellitus among adults in African countries. *Journal of Diabetes & Metabolic Disorders*. 2020; 19:1931-1941.
- Zullig LL, Gellad WF, Moaddeb J, Crowley MJ, Shrank W, Granger BB, et al. Improving diabetes medication adherence: successful, scalable interventions. *Patient Preference and Adherence*. 2015; 9:139-149.
- Lam WY, Fresco P. Medication adherence measures: an overview. *BioMed Research International*. 2015; 2015:1-14.
- Othman G, Ali F, Ibrahim MI, Al-Worafi YM, Ansari M, Halboup AM. Assessment of Anti-Diabetic Medications Adherence among Diabetic Patients in Sana'a City, Yemen: A Cross-Sectional Study. *Journal of Pharmaceutical Research International*. 2020;32(21):114-122.
- Williams JL, Walker RJ, Smalls BL, Campbell JA, Egede LE. Effective interventions to improve medication adherence in Type 2 diabetes: a systematic review. *Diabetes Management (Lond)*. 2014;4(1):29-48.
- Schwartz DD, Stewart SD, Aikens JE, Bussell JK, Osborn CY, Safford MM. Seeing the person, not the illness: promoting diabetes medication adherence through patient-centered collaboration. *Clinical Diabetes*. 2017;35(1):35-42.

- Al-Haj Mohd MM, Phung H, Sun J, Morisky DE. The predictors to medication adherence among adults with diabetes in the United Arab Emirates. *Journal of Diabetes & Metabolic Disorders*. 2016; 15:1-9.
- Elsous A, Radwan M, Al-Sharif H, Abu Mustafa A. Medications adherence and associated factors among patients with type 2 diabetes mellitus in the Gaza Strip, Palestine. *Frontiers in Endocrinology*. 2017; 8:100-109.
- Polonsky WH, Henry RR. Poor medication adherence in type 2 diabetes: recognizing the scope of the problem and its key contributors. *Patient Preference and Adherence*. 2016; 10:1299-1307.
- Chatterjee S, Davies MJ. Current management of diabetes mellitus and future directions in care. *Postgraduate Medical Journal*. 2015;91(1081):612-621.
- Sendekie AK, Netere AK, Kasahun AE, Belachew EA. Medication adherence and its impact on glycemic control in type 2 diabetes mellitus patients with comorbidity: A multicenter cross-sectional study in Northwest Ethiopia. *PLoS One*. 2022;17(9): 1-5.
- Iloh GUP. Family functionality, medication adherence and blood glucose control among ambulatory type 2 diabetic patients in a Nigerian hospital. *Journal of Basic and Clinical Pharmacy*. 2017;8(3):149-153.
- Elsous A, Radwan M, Al-Sharif H, Abu Mustafa A. Medications adherence and associated factors among patients with type 2 diabetes mellitus in the Gaza Strip, Palestine. *Frontiers in Endocrinology*. 2017; 8:100-109
- Osuji NA, Ojo OS, Malomo SO, Sogunle PT, Egunjobi AO, Odebunmi OO. Relationship between glycemic control and perceived family support among people with type 2 diabetes mellitus seen in a rich kinship network in Southwest Nigeria. *Family Medicine and Community Health*. 2018;6(4):168-177.
- Kassahun A, Gashe F, Mulisa E, Rike WA. Nonadherence and factors affecting adherence of diabetic patients to anti-diabetic medication in Assela General Hospital, Oromia Region, Ethiopia. *Journal of Pharmacy & Bioallied Sciences*. 2016;8(2):124-129.
- Ibrahim AO, Agboola SM, Elegbede OT, Ismail WO, Agbesanwa TA, Omolayo TA. Glycemic control and its association with sociodemographics, comorbid conditions, and medication adherence among patients with type 2 diabetes in southwestern Nigeria. *Journal of International Medical Research*. 2021;49(10):1-13
- Sada KB, Sabir AA, Sakajiki AM, Umar MT, Abdullahi U, Sikiru YA. Clinical profile of patients with diabetes mellitus in Gusau, Northwestern Nigeria. *Annals of African Medicine*. 2021;20(2):78-83.
- David EA, Aderemi-Williams RI, Soremekun RO, Nasiru IY, Auta A. Glycemic control and its determinants among patients with type 2 diabetes in a specialist hospital in Northeast, Nigeria. *South African Journal of Psychiatry*. 2019;6(1):1-8.
- Wu P, Liu N. Association between patients' beliefs and oral antidiabetic medication adherence in a chinese type 2 diabetic population. *Patient Preference and Adherence*. 2016; 10:1161-1167.
- Emeka EA, Echendu ST, Iloh GU. Association between Perceived Family Support and the Control of Adult Type 2 Diabetes Mellitus in a Nigerian Tertiary Hospital. *International Journal of Family Medicine & Healthcare*. 2022;1(1):1-7.

- Al-Haj Mohd MM, Phung H, Sun J, Morisky DE. The predictors to medication adherence among adults with diabetes in the United Arab Emirates. *Journal of Diabetes & Metabolic Disorders*. 2016; 15:1-9.
- Ahmed NO, Abugalambo S, Almethen GH. Adherence to oral hypoglycemic medication among patients with diabetes in Saudi Arabia. *International Journal of Health Sciences (Qassim)*. 2017;11(3):45-49.
- Emeka EA, Echendu ST, Iloh GU, Umeadi EN, Adinnu KM, Ezeude CM, et al. Association between Perceived Family Support and the Control of Adult Type 2 Diabetes Mellitus in a Nigerian Tertiary Hospital. *International Journal of Family Medicine & Healthcare*. 2022;1(1):1-7.
- Abdulsalam LB, Pitmang S, Sabir A, Olatunji LK. Relationship between family dynamics and glycemic control among adults with type 2 diabetes mellitus presenting at Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. *International Archives of Medicine*. 2019;12(3):1-8.
- Ibrahim AO, Agboola SM, Elegbede OT, Ismail WO, Agbesanwa TA, Omolayo TA. Glycemic control and its association with sociodemographics, comorbid conditions, and medication adherence among patients with type 2 diabetes in southwestern Nigeria. *Journal of International Medical Research*. 2021;49(10)4-8
- Osuji NA, Ojo OS, Malomo SO, Sogunle PT, Egunjobi AO, Odebunmi OO. Relationship between glycemic control and perceived family support among people with type 2 diabetes mellitus seen in a rich kinship network in Southwest Nigeria. *Family Medicine and Community Health*. 2018;6(4):168-177.
- Ayele AA, Tegegn HG, Ayele TA, Ayalew MB. Medication regimen complexity and its impact on medication adherence and glycemic control among patients with type 2 diabetes mellitus in an Ethiopian general hospital. *BMJ Open Diabetes Research & Care*. 2019;7(1):.5-6
- Chin SS, Lau SW, Lim PL, Wong CM, Ujang N. Medication adherence, its associated factors and implication on glycaemic control in patients with type 2 diabetes mellitus: A cross-sectional study in a Malaysian primary care clinic. *Malaysian Family Physician*. 2023; 18:14-16

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