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Patterns of Medication Prescription and Barriers to Medication Adherence Among Outpatients at a Rural Tertiary Hospital in South-South Nigeria

Mojeed O. Rafiu[1], Fatelyn Okakah[2], Isabella M. Oseghale[2], Sule S. Monday[2], Ndidi N. Akerele[1], Sulaiman D. Ahmed[1], Adeola C. Abiola[3], Adewale E. Adetunji[4], Airenakho Emorinken[5], Christian E. Erohubie[1], Orebowale Olugbemide[6], Chukwuemeka O. Azubike[7]*

[1]*Nephrology Unit, Internal Medicine Department, Irrua Specialist Teaching Hospital, Irrua, Edo State, and Medicine Department, Faculty of Clinical Sciences, College of Medicine, Ambrose Alli University, Ekpoma, Edo State, Nigeria.*
[2]*Public Health and Community Medicine Department, Irrua Specialist Teaching Hospital, Irrua, Edo State, and Community Medicine Department, Faculty of Clinical Sciences, College of Medicine, Ambrose Alli University, Ekpoma, Nigeria.*
[3]*Mental Health and Psychiatric Nursing Department, Faculty of Nursing Science, College of Health Sciences, Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria.*
[4]*Nephrology Unit, Paediatrics Department, Irrua Specialist Teaching Hospital, Irrua, and Faculty of Clinical Sciences, College of Medicine, Ambrose Alli University, Ekpoma, Nigeria.*
[5]*Rheumatology Unit, Internal Medicine Department, Irrua Specialist Teaching Hospital, Irrua, and Department of Medicine, Faculty of Clinical Sciences, Ambrose Alli University, Ekpoma, Nigeria.*
[6]*Endocrinology Unit, Internal Medicine Department, Irrua Specialist Teaching Hospital, Irrua, and Department of Medicine, Faculty of Clinical Sciences, Ambrose Alli University, Ekpoma, Nigeria.*
[7]*Medical Physiology Department, College of Medicine, University of Benin, Benin, Edo State, and Nephrology Unit, Internal Medicine Department, Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria.*

Abstract

Context: Medication adherence is vital for optimal therapeutic outcomes; however, nonadherence remains a major public health concern, resulting in suboptimal health outcomes and higher medical expenses.
Objective: This study evaluated medication prescription patterns, adherence levels, and associated barriers among patients attending outpatient clinics at the Irrua Specialist Teaching Hospital (ISTH), Edo State, Nigeria.
Materials and Methods: A descriptive cross-sectional study was conducted among 164 patients using a two-stage sampling technique (purposive sampling technique for clinic selection, and systematic random sampling technique for participant selection) at the Irrua Specialist Teaching Hospital (ISTH) outpatient clinics, using a structured questionnaire to assess socio-demographics, prescription patterns, adherence behaviors, and barriers. Adherence was evaluated using an adapted Morisky Medication Adherence Scale (MMAS-8). Data were analysed using descriptive statistics and inferential (chi-square) tests.The level of significance was $p<0.05$.
Results: The mean age of participants was 45.33 ± 3.79 years. More than half were females (62.8%). Most patients n (81.1%) received three or more medications, predominantly via the oral route. Analgesics (30%), antihypertensives (22%), and antidiabetics (20%) were the most frequently prescribed medications. Adherence was low (42%) to moderate (30%), driven by stopping medication upon symptom improvement (63.4%), skipping doses due to cost (56.1%), and forgetfulness (53.0%). Socio-demographic factors

Corresponding Author:
Mojeed Olaitan Rafiu
Irrua Specialist Teaching Hospital, Irrua, Edo State, Nigeria.
raphymoj2012@gmail.com | ORCID: 0000-0001-6289-0967
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showed no significant association with adherence (p>0.05). However, medication type (p=0.022), number of prescribed drugs (p=0.016), primary prescriber (p = 0.043), and frequency of prescription review (p=0.003) were significantly associated with adherence. High drug costs (38.4%) and long waiting times (18.9%) were the most commonly reported barriers.

Conclusion: Polypharmacy and oral administration were the predominant patterns of medication prescription to outpatients in ISTH. Medication adherence was suboptimal and was primarily influenced by regimen and health system factors rather than by sociodemographic factors. Simplifying regimens, reducing drug costs, improving education, and conducting regular reviews are recommended strategies to improve adherence.

Keywords: Medication adherence, prescription pattern, outpatient, non-adherence.

Introduction

Medication adherence is defined by the World Health Organization (WHO) as how closely a patient's actions align with the treatment plan established with their healthcare provider.[1] Non-adherence is broadly categorised into primary non-adherence (failure to fill or initiate a new prescription) and secondary non-adherence (filling a prescription but failing to take it as directed).[2] Non-adherence can be either unintentional—driven by unpreventable barriers such as forgetfulness, cost, complex administration, or poor health literacy—or intentional, stemming from deliberate patient choices influenced by fear of adverse effects, doubt of efficacy, or conflicting personal beliefs.[3]

Prescription patterns in outpatient settings heavily influence adherence. In many developing nations, irrational prescribing—high pill burden— predicts poor adherence.[4] While the WHO recommends an average of 1.6 to 1.8 drugs per patient encounter, studies across Nigeria and sub-Saharan Africa report averages between 3.1 and 4.5.5 This excessive pill burden increases the risk of adverse drug events and significantly impairs compliance, particularly among patients with multimorbidity. Consequently, non-adherence severely undermines therapeutic outcomes, especially in resource-limited settings.[6] The WHO estimates that nearly 50% of patients with chronic conditions in developed nations fail to adhere to prescribed therapies, with rates even higher in low- and middle-income countries (LMICs).[7] The WHO reported that despite improvement in medication adherence research, non-adherence remains prevalent.[7] Globally, poor adherence drives disease progression, treatment failure, avoidable complications, and mortality, accounting for approximately 125,000 preventable deaths per year, and nearly 33% to 69% of medication-related admissions are due to poor adherence in the United States alone.[8,9]

In LMICs across sub-Saharan Africa, this burden is exacerbated by systemic poverty, inadequate education, corruption, and poor governance, which can lead to supply chain instabilities, unsupportive environmental conditions, geographical isolation, and cultural norms.[10] In South Africa, nonadherence among hypertensive patients in private healthcare settings is driven by a complex interplay of socioeconomic, cognitive, and regimen-related barriers.[11] Primary factors include financial constraints, cognitive oversights, diagnostic skepticism, and limited health literacy regarding antihypertensive benefits.[11] In Nigeria, a study at Ilishan-Remo observed that despite the overall adherence to antihypertensive medications being high, financial constraints presented a significant barrier to medication acquisition, and this challenge was further compounded by the widespread absence of health insurance coverage.[12] In India, nearly half of the patients were nonadherent to antihypertensive medications (48%), with significant variation across studies.[13] The study in India also found that nonadherence was significantly higher among younger patients, rural residents (57%), and community settings (51%).[13] These figures highlight a pervasive crisis across diverse outpatient populations—the primary point of care in under-resourced regions.

Despite the critical role of adherence in clinical success, comprehensive research examining outpatient prescribing practices, levels of medication adherence, and barriers to patient compliance, especially in resource-limited settings, remains scarce. Most existing literature isolates single disease states (e.g., HIV, hypertension, or diabetes mellitus), failing to capture broader population-level dynamics across general outpatient departments.[1,14,15] Without context-specific evidence, clinical interventions risk being ineffective or unsustainable.

Accordingly, this study aimed to evaluate medication

prescription patterns, assess adherence levels, and identify the primary barriers to compliance among patients attending the outpatient clinics of the Irrua Specialist Teaching Hospital (ISTH), Nigeria.

Materials and Methods

Study Setting

This study was conducted at the ISTH, a major tertiary referral center located in Irrua, Esan Central Local Government Area, Edo State, Nigeria. The hospital offers both inpatient and outpatient care in multiple specialties, such as Internal Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, Family Medicine, and Community Medicine, serving patients across the South-South and North-Central geopolitical zones of Nigeria. This study focused on outpatient departments, which function as the primary clinical interface for ambulatory care.

Study Design and Duration

A hospital-based descriptive cross-sectional study design was used. The entire study spanned six months, with data collection, statistical analysis, and final reporting completed over a dedicated two-month period.

Study Population and Eligibility Criteria

Requirements included:

- **Inclusion Criteria:** Adult patients (aged ≥ 18 years) attending selected outpatient clinics, prescribed at least one medication during the index visit, and willing to provide written informed consent.
- **Exclusion criteria were as follows:** patients presenting with severe cognitive impairment or psychiatric illness that would preclude reliable recall or comprehension; individuals with uncompensated sensory or communication barriers (e.g., severe speech/hearing impairment) lacking a caregiver proxy; and patients who were hemodynamically unstable or critically ill.

Sample Size Calculation

The minimum required sample size (n) was calculated using Cochran's formula for single proportions:[16]

$$n=(Z^2 \cdot p \cdot q)/d^2$$

Where:

- Z = standard normal deviate corresponding to a 95% confidence interval (1.96)
- p = estimated baseline adherence rate (0.892), derived from a previous study conducted at Lagos State University Teaching Hospital, Nigeria.[17]
- q=1-p=0.108
- d = margin of error (0.05)

Substituting these parameters yields the following:

$$n=((1.96)^2\times0.892\times0.108)/(0.05)^2\approx148$$

To adjust for an anticipated non-response rate of 10% (response rate = 90%), the final calculated sample size was expanded as follows:

$$N=148/0.90=164.4\approx164 \text{ participants}$$

Sampling Technique

A two-stage sampling technique was employed.

- **Stage 1 (Clinic Selection):** The General Outpatient Department (GOPD) and Medical Outpatient Department (MOPD) were purposively selected because of their high patient turnover and representation of diverse medical conditions requiring ongoing pharmacotherapy.
- **Stage 2 (Participant Selection):** Systematic random sampling was implemented within each selected clinic during routine operating hours to recruit eligible participants until the required sample size was reached. This was achieved by selecting participants at weekly intervals from the clinic registration list.

Data Collection

Data were collected using a pretested, structured, interviewer-administered questionnaire designed to capture: Socio-demographic characteristics, prescription patterns, clinical demographics, barriers and factors influencing medication adherence.

Assessment of Medication Adherence

Medication adherence was measured using the validated 8-item Morisky Medication Adherence Scale (MMAS-8).[18] Scores were summed (range, 0–8) and categorized according to standard criteria:

- High adherence: Score = 8
- Medium adherence: Score = 6-7
- Low adherence: Score = <6

Statistical Analysis

Data were processed and analyzed using IBM SPSS Statistics for Windows, Version 23.0 (IBM Corp., Armonk, NY, USA). Continuous variables that were normally distributed were summarised using means and standard deviations (SD), while categorical parameters were presented as absolute frequencies and percentages (n,%). Relationships between categorical variables were assessed using the Pearson Chi-square (χ^2) test. Statistical significance was defined as a two-tailed P-value <0.05.

Ethical Considerations

The Health Research Ethics Committee (HREC) of ISTH approved this study on December 5, 2025 (Protocol Number: ISTH/HREC/20251811/775). In strict accordance with the Declaration of Helsinki, all respondents provided written informed consent before data collection. To maintain complete participant privacy, interviews were conducted in private locations, and individual identities were masked using unique code numbers.

Result

A total of 164 participants completed the questionnaire, resulting in a response rate of 100%. Table 1 presents the socio-demographic characteristics of the 164 respondents in this study. The findings show that the study population was largely composed of middle-aged adults, with a mean age of 45.33 ± 13.79 years, indicating that most participants were within the economically active age group. Participants were predominantly middle-aged, female, married, and largely educated, with most engaged in income-generating occupations. Overall, the study population reflected an economically active outpatient group.

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency(n=164)	Percentage(100%)
Age group		
18-29	30	18.3
30-44	41	25.0
45-59	65	39.6
60-74	18	11.0
>75	10	6.1
Mean Age ± S.D = 45.33 ± 13.79		
Gender		
Male	61	37.2
Female	103	62.8
Marital status		
Single	57	34.8
Married	78	47.6
Divorced	24	14.6
Widowed	5	3.1
Level of education		
No formal education	1	0.6
Primary	16	9.8
Secondary	55	33.5
Tertiary	92	56.1
Occupation		
Farming	13	7.9
Trading/business	36	22.0
Civil servant	52	31.7
Artisan	35	21.3
Unemployed	3	1.8
Others	25	15.2

SD: standard deviation.

Table 2: Patterns Of Medication Prescription and Monthly Incomes Among Patients Attending Outpatient Clinics

Variable	Frequency (n=164)	Percentage (100%)
Number of medications prescribed		
1	5	3.0
2	34	20.7
3	66	40.2
4 or more	59	36.0
Route of administration of prescribed medication		
Oral	133	81.1
Injection	15	9.1
Topical	7	4.3
Others	9	5.5
The number of times the prescriber reviewed the prescription		
Every visit	20	12.2
Occasionally	70	42.7
Rarely	53	32.3
Never	21	12.8
Primary prescriber of medication		
Doctor	134	81.7
Nurse	17	10.4
Pharmacist	6	3.7
Others	7	4.3
Monthly income of respondents		
<₦50,000 ($36)	37	22.6
₦50,000 ₦100,000 ($36-$72)	45	27.4
>₦100,000 (>$72)	82	50.0

Table 2 describes the patterns of medication prescription among respondents attending general outpatient clinics at ISTH and the monthly income of participants. The findings showed that most patients received multiple medications per visit, indicating the presence of polypharmacy. Oral administration was the predominant route of drug delivery, and medications were mainly prescribed by physicians. Prescription review was not consistently performed at every visit, and respondents' income levels varied, suggesting differences in financial capacity that may influence access to and use of prescribed medications.

Figure 2 illustrates the types of medications prescribed to the respondents during general outpatient visits. Analgesics were the most commonly prescribed medications (30%), followed by antihypertensive (22%) and antidiabetic medications (20%). Antimalarial drugs (16%) also constituted a notable proportion of prescriptions,

whereas antibiotic medications (7%) and other drug categories (5%) were less frequently prescribed. Overall, the figure indicates that medication prescriptions among outpatients at Irrua Specialist Teaching Hospital were predominantly for pain management and chronic disease control, reflecting

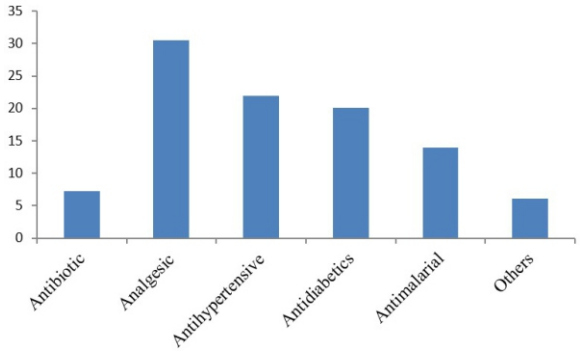

Fig 2. Type of medications prescribed during outpatient visits

the clinical profile of patients attending the facility.

Table 3 presents the medication adherence behaviors of the respondents and indicates suboptimal adherence in the study population. Many respondents

Table 3: Medication Adherence Among Patients Receiving Prescriptions

Variable	Frequency (n=164)	Percentage (100%)
Forgot to take your medications		
Yes	87	53.0
No	77	47.0
Missed a medication dose in the last 2 weeks		
Yes	67	40.9
No	97	59.1
Stopped medication when symptoms improved		
Yes	104	63.4
No	60	36.6
Stopped medication when symptoms exacerbated		
Yes	87	53.0
No	77	47.0
Difficult to stick to your medication schedule		
Yes	84	51.2
No	80	48.8
Took your medications exactly as prescribed		
Always	108	65.9
Often	36	22.0
Rarely	20	12.2
Skipped your medications due to cost		
Yes	92	56.1
No	72	43.9
Forgot to refill your prescription on time		
Yes	84	51.2
No	80	48.8

reported behaviors consistent with non-adherence, including forgetfulness, missed doses, and discontinuation of medication based on symptom changes. Difficulties in maintaining medication schedules and cost-related drug skipping were also evident. Although a proportion of respondents reported taking medications as prescribed, the overall pattern suggests partial adherence influenced by behavioral and financial factors.

Figure 3 illustrates the distribution of medication adherence levels among respondents, as assessed using the adapted Morisky Medication Adherence Scale (MMAS-8). Based on the MMAS-8 scoring, respondents were categorized into low, moderate, and high adherence groups. The figure shows that most respondents fell into the low and moderate adherence categories, while a smaller proportion achieved high adherence. This distribution indicates that suboptimal medication adherence is common among patients attending general outpatient clinics at the ISTH, underscoring the critical need for targeted

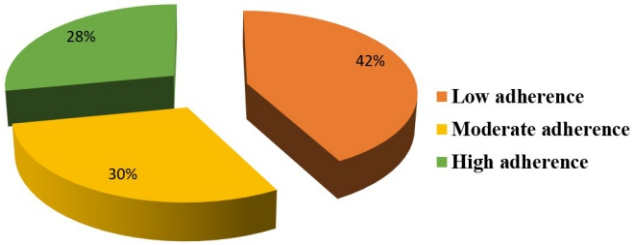

Fig 3. Distribution of adherence levels among the respondents

strategies to foster better medication adherence.

Overall, the findings indicate that sociodemographic factors did not significantly influence medication adherence among patients attending general outpatient clinics at ISTH (Table 4).

Medication type, number of prescribed drugs, primary prescriber, and prescription review frequency significantly affected medication adherence among general outpatient clinic attendees (Table 5).

Table 6 shows the challenges affecting medication adherence among the respondents. The findings indicate that financial constraints were the most prominent barrier, followed by health system–related factors such as long waiting times. Medication-related issues, including side effects and difficulty in obtaining drugs, were also reported, while fewer

respondents identified forgetfulness, cultural reasons, or unclear instructions as major challenges. Overall, the results suggest that economic and healthcare system factors were the primary contributors to adherence difficulties among the study population.

Table 4: Associations Between Sociodemographic Characteristics and Level of Adherence

Variable	Level of adherence			χ^2	P-value
Age group	Low adherence	Moderate adherence	High adherence		
				8.273	0.407
18-29	16(53.3%)	8(26.7%)	6(20.0%)		
30-44	18(43.9%)	13(31.7%)	10(24.4%)		
4 5-59	27(41.5%)	19(29.2%)	19(29.2%)		
60-74	5(27.8%)	4(22.2%)	9(50.0%)		
>75	3(30.0%)	5(50.0%)	2(20.0%)		
Gender				3.674	0.159
Male	20(32.8%)	20(32.8%)	21(34.4%)		
Female	49(47.6%)	29(28.2%)	25(24.3%)		
Marital status				4.106	0.662
Single	29(50.9%)	16(28.1%)	12(21.1%)		
Married	28(35.9%)	25(32.1%)	25(32.1%)		
Divorced	10(41.7%)	6(25.0%)	8(33.3%)		
Widowed	2(40.0%)	2(40.0%)	1(20.0%)		
Level of education				4.402	0.622
No formal education	0(0.0%)	0(0.0%)	1(100%)		
Primary	6(37.5%)	4(25.0%)	6(37.5%)		
Secondary	23(41.8%)	15(27.3%)	17(30.9%)		
Tertiary	40(43.5%)	30(32.6%)	22(23.9%)		
Occupation				7.823	0.646
Farming	5(38.5%)	4(30.8%)	4(30.8%)		
Trading/business	14(38.9%)	8(22.2%)	14(38.9%)		
Civil servant	21(40.4%)	18(34.6%)	13(25.0%)		
Artisan	14(40.0%)	12(34.3%)	9(25.7%)		
Unemployed	3(100%)	0(0.0%)	0(0.0%)		
Others	12(48.0%)	7(28.0%)	6(24.0%)		

Table 6 shows the challenges affecting medication adherence among the respondents. The findings indicate that financial constraints were the most prominent barrier, followed by health system–related factors such as long waiting times. Medication-related issues, including side effects and difficulty in obtaining drugs, were also reported, while fewer respondents identified forgetfulness, cultural reasons, or unclear instructions as major challenges. Overall, the results suggest that economic and healthcare system factors were the primary contributors to adherence difficulties among the study population.

Table 7 shows the association between the challenges affecting medication adherence and adherence levels among respondents. Although variations were observed across the different challenges, no statistically significant relationship was observed between the reported challenges and the level of medication adherence (p = 0.345).

Table 5: Association Between Prescription-Related Factors and Level of Adherence

Variable	Level of adherence			χ^2	P-value
	Low adherence	Moderate adherence	High adherence		
Type of Medication				20.939	0.022*
Antibiotic	23(65.7%)	8(22.9%)	4(11.4%)		
Analgesic	16(32.0%)	19(38.0%)	15(30.0%)		
Antihypertensive	14(38.9%)	8(22.2%)	14(38.9%)		
Antidiabetics	3(25.0%)	3(25.0%)	6(50.0%)		
Antimalarial	9(39.1%)	8(34.8%)	6(26.1%)		
Others	4(40%)	5(50%)	1(10%)		
Number of medications prescribed				15.656	0.016*
1	4(80.0%)	0(0.0%)	1(20.0%)		
2	20(58.8%)	11(32.4%)	3(8.8%)		
3	25(37.9%)	23(34.8%)	18(27.3%)		
4 more	20(33.9%)	15(25.4%)	24(40.7%)		
Route of administration of prescribed medication				6.395	0.380
Oral	53(39.8%)	42(31.6%)	38(28.6%)		
Injection	6(40.0%)	6(33.3%)	4(26.7%)		
Topical	6(85.7%)	0(0.0%)	1(14.3%)		
Others	4(44.4%)	2(22.2%)	3(33.3%)		
Number of times the prescriber reviewed the prescription				19.50	0.003*
Every visit	13(52.0%)	6(24.0%)	6(24.0%)		
Occasionally	34(48.6%)	22(31.4%)	14(20.0%)		
Rarely	19(35.8%)	14(26.4%)	20(37.7%)		
Never	3(14.3%)	7(33.3%)	11(52.4%)		
Primary prescriber of medication				12.99	0.043*
Doctor	62(46.3%)	39(29.1%)	33(24.6%)		
Nurse	4(23.5%)	7(41.2%)	6(35.3%)		
Pharmacist	0(0.0%)	1(16.7%)	5(83.3%)		
Others	3(42.9%)	2(28.6%)	2(28.6%)		

Table 6: Barriers to Medication Adherence

Variable	Frequency (n=164)	Percentage (100%)
Challenges		
Difficulty obtaining medications	15	9.2
High cost of medications	63	38.4
Medication side effects	21	12.8
Confusing instructions	3	1.8
Forgetting doses	13	7.9
Long waiting times	31	18.9
Cultural or religious reasons	7	4.3
Others	11	6.7

Table 7: Association Between Barriers to Medication Adherence and Level of Adherence

Variable	Level of adherence			χ2	P-value
Challenges	**Low adherence**	**Moderate adherence**	**High adherence**		
Difficulty obtaining medications	8(53.3%)	1(6.7%)	6(40.0%)	15.504	0.345
High cost of medications	21(33.3%)	23(36.5%)	19(30.2%)		
Medication side effects	11(52.4%)	6(28.6%)	4(19.0%)		
Confusing instructions	1(33.3%)	1(33.3%)	1(33.3%)		
Forgetting doses	8(61.5%)	2(15.4%)	3(23.1%)		
Long waiting times	13(41.9 %)	11(35.5%)	7(22.6%)		
Cultural or religious reasons	5(71.4%)	1(14.3%)	1(14.3%)		
Others	2(18.2%)	4(36.4%)	5(45.5%)		

Discussion

All 164 enrolled respondents completed the survey (100% response rate). The predominant age bracket was 45–59 years, with female participants outnumbering males in this age group. This demographic distribution aligns with documented healthcare utilization trends, in which women exhibit higher engagement with outpatient and preventive services—a pattern driven by gender-based differences in health-seeking behavior.[19] Consequently, increased healthcare exposure offers women greater opportunities to receive prescriptions, understand clinical instructions, and adhere to therapeutic regimens.

Analgesics, antihypertensives, and antibiotics were the most commonly prescribed medication classes, with a substantial proportion of respondents receiving three or more drugs per visit, a clear indicator of polypharmacy. These findings parallel outpatient prescribing patterns reported at the University College Hospital in Ibadan, Nigeria.[20] Across the broader African region, an average cumulative figure of 2.08±0.98 drugs per prescription, while 50% of the hospitals maintained an average prescription load exceeding two drugs, as reported in an Ethiopian study.[21] Globally, research from India highlights polypharmacy as a defining feature of outpatient care, particularly among patients with chronic multimorbidities requiring guideline-directed combination therapies.[22] However, this can increase the risk of non-adherence. Regarding routes of administration, the overwhelming preference for oral delivery mirrors observations from other low- and middle-income countries, including South Africa, where oral formulations remain the most cost-effective, practical, and acceptable modality for outpatient care of geriatric patients.[23]

A significant proportion of respondents demonstrated suboptimal adherence, characterized by frequent forgetfulness, recent missed doses, and intentional treatment discontinuation after symptomatic improvement. These observations are consistent with the findings from the University of Port Harcourt Teaching Hospital, where 71.2% of the participants had poor adherence to medication.[24] Comparable variability exists across Africa: studies in Ghana reported adherence levels of approximately 53.1% to antiretroviral therapy (ART) in people living with HIV (PLHIV), whereas the pooled prevalence of adherence to anti-diabetic medication in Ethiopia was 69.53% (ranging from 31.2% to 97%, depending on the specific region and evaluation methodology).[25,26] Globally, a large population-based study in Pakistan found that only 36.6% of hypertensive patients maintained good adherence,[27] underscoring that poor adherence represents a common challenge transcending geographic boundaries.

Sociodemographic variables (age, sex, marital status, education, and occupation) were not significantly associated with medication adherence. This is consistent with findings from a teaching hospital in Ilorin, Nigeria, where clinical and regimen-related parameters were far stronger predictors of adherence than demographic factors.[28] Similarly, research at Mbarara Regional Referral Hospital in Uganda revealed inconsistent demographic predictors, reporting that the key independent factors linked to poor antidiabetic medication adherence were age exceeding 60 years and a diabetes history longer than 5 years.[29] Conversely, studies from Europe frequently report stronger links between educational attainment and adherence,[30] likely reflecting regional disparities in health literacy and healthcare infrastructure.

Prescription-related factors, specifically medication class, pill burden, primary prescriber, and prescription review frequency, were significantly associated with adherence. Evidence across Nigerian populations confirms that regimen complexity and high pill burden impair compliance; a cross-sectional study among Nigerian type 2 diabetes mellitus patients reported regimen complexity and poor provider communication as major barriers.[31] Global systematic reviews further validate that polypharmacy, complex dosing schedules, and inadequate patient-provider communication consistently exacerbate non-adherence across chronic conditions.[32]

Medication cost emerged as the leading barrier to adherence, followed by long facility waiting times and adverse effects. This finding highlights the severe impact of out-of-pocket health expenditure and limited insurance coverage in Nigeria and across sub-Saharan Africa.[31,33] Internationally, evidence from the United States confirms that medication costs heavily drive non-adherence, while broader literature emphasizes that side effect profiles and complex instructions further erode long-term therapeutic compliance.[34]

In summary, medication adherence in this setting is dictated more strongly by prescription dynamics and health system constraints than by sociodemographic traits. Mitigating these adherence barriers requires targeted systemic interventions, including routine prescription reviews, improved drug affordability, structured patient education, and optimized healthcare delivery systems.

This study had some methodological limitations. First, relying on self-reported questionnaires to assess medication adherence introduces potential recall and social desirability biases, which may overestimate adherence compared with objective measures. Second, conducting the study at a single tertiary institution limits the generalizability of the findings to other clinical settings and geographic regions. Finally, the cross-sectional design captured data at a single time point, precluding the determination of causal relationships between prescription patterns, sociodemographic variables, and adherence outcomes. Future longitudinal studies incorporating direct adherence metrics are therefore recommended.

Conclusion

This study reveals a high prevalence of polypharmacy among outpatients in ISTH, with physician-driven oral regimens accounting for the majority of prescriptions and inconsistent medication review practices. Suboptimal medication adherence is primarily driven by regimen complexity, polypharmacy, and system-level barriers—notably high drug costs and prolonged wait times—rather than sociodemographic factors. Improving adherence requires targeted interventions, including regimen simplification, institutionalized medication reconciliation, and structural strategies to optimize clinical workflows and medication affordability.

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