

Research Paper

Medication adherence among Nigerian patients with rheumatoid arthritis: a two instruments survey

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Abstract

Objectives Medication adherence is still a significant problem in chronic diseases management and rheumatoid arthritis (RA) is not an exception. There is very little information regarding the level and influencing factors of medication adherence among Nigerian patients with RA. This study evaluated the level and determinants of medication adherence among patients with RA in a Nigerian referral hospital.

Methods Using a questionnaire based cross sectional survey, 169 patients with RA were evaluated for their medication adherence using two validated instruments namely; five-item Medication Adherence Report Scale and five-item Compliance Questionnaire for Rheumatology. The two instruments were subjected to descriptive (mean and frequencies) and mean difference (chi-square, *t*-test, Pearson correlation) analysis, and their reliability (Cronbach alpha) in a Nigerian setting was also established.

Key findings The level of non-adherence reported in this study was high and ranged from 48.5% for the CQR to 63.9% for the Medication Adherence Report Scale questionnaires respectively. Being of a male gender, of an older age, the higher number of pills taken, better education and the duration of the disease all significantly contributed to higher adherence measures among these RA patients ($P < 0.05$ for all). Both questionnaires used were correlated and reliable for use among patients with rheumatoid arthritis in Nigeria.

Conclusion Findings from this study show that non adherence to medications among RA patients were high and factors such age, gender, education, pill burden could have been responsible.

Keywords: adherence; arthritis; methodologies; outcomes; patient

Introduction

Rheumatoid arthritis (RA) is a chronic disease of concern in Africa, and it has been projected to double in its prevalence within the African shores.^[1] Individuals with RA are twice as

likely to die at the same age when compared to a person without the disorder in the general population.^[2] However, the prognosis of this autoimmune disease is significantly improved when managed early and intensively with antirheumatic drugs.^[3] These

antirheumatic drugs when taken properly by patients help prevent joint damage.^[4]

Medication adherence to pharmacological therapy in RA is a serious clinical issue with as little as 30% and as much as 80% of individuals with RA reported to be non-adherent to their prescriptions.^[5,6] Adherence to RA medications can generally be measured by direct measure of body fluid levels of the drug, or indirectly by pharmacy records, electronic bottle cap monitors and most commonly by patient self-report.^[6] Improving medication adherence in RA patients is therefore an essential part of achieving an overall therapeutic outcome in such patients irrespective of the method of assessment adopted.

Adherence is an intermediate clinical outcome and an assessment of adherence starts with a systematic assessment of predisposing risk factor. Non-adherence to medications for RA is said to be multifactorial.^[7] Studies have been conducted to identify consistent risk factors for medication non-adherence in the RA population, but that has proven difficult. A review by van de Bemt and colleagues summarizes the effects of patient, socio-economic, disease, and therapy-related factors that are associated with non-adherence to antirheumatic drugs.^[6] Currently there is limited understanding about the level of and factors that influence medication adherence in patients with RA in Nigeria. In addition, the lack of a comparison of available adherence measures limits the ability to compare findings across studies and to know the most effective adherence measures that would be most appropriately employed in specific settings.

Thus, the purpose of this study was to evaluate the level of and influence of socio-economic and therapy-related factors on medication adherence in a sample of patients with RA using two self-reported questionnaires.

Methods

Study setting

The observational and cross-sectional survey was conducted at the National Orthopedic Hospital, Enugu (NOHE), the only public referral hospital for orthopaedic and comorbid illness in the entire Eastern region of Nigeria. The hospital has about 100 bed spaces, with eight subspecialization units and centres with over 150 doctors and 40 pharmacists in its health workforce.

Patients

All patients visiting the orthopaedic clinic between the 3 months (March–May 2018) for treatment of RA, that is, currently taking NSAIDs, Opioids, Disease Modifying Antirheumatic Drugs (DMARDs) or corticosteroids for at least 6 months were recruited for this survey. The dosage regimen for each drug prescribed for the patients was determined from their medication folders and/or prescription leaflets. Inpatients were excluded from the study as they were under strict monitoring during their hospital stay on admission. Patient recruitment of the survey was conducted over 2 months, sufficient enough to meet nearly all patients with a routine hospital consultation. Information obtained from the patients included sociodemographic characteristics (such as gender, age, marital status, educational status and monthly earning) and therapy-related details (pill burden, history of admission, duration of medication and prescribed medications).

Adherence measure

Two study instruments measuring adherence, one generic and one specific, were employed for this study. The 5-item Medication

Adherence Report Scale (MARS-5) is a shorter version of the MARS.^[8] It is a generic self-reported questionnaire with five items which have been validated and used to assess medication adherence in other chronic diseases including RA.^[9,10] The items on the MARS-5 scale have also a five-point response scale (never, rarely, sometimes, often and always) which are scored from never = 5 to very often = 1. The cut-off point for adherent and non-adherent groups of patients are set by the researchers pending in their setting. The 5-item Compliance Questionnaire Rheumatology (CQR-5) an abridged version developed from the original 19-item CQR was adapted in this study. CQR-5 has been validated for specific measurement of adherence in RA patients.^[11] Its test-retest reliability over a short and long term among RA patients has been reported.^[12] The instrument has five items and is measured on a four-point Likert scale (strongly disagree = 1 to strongly agree = 4). Copies of the study instruments were distributed to patients identified as having a physician's diagnosis of 'RA'. A short explanation of the purpose of the instrument was given to them and verbal consent to participate in the survey was obtained. Both instruments were originally in the English language which was the language that was used in obtaining response from the patients. The content and face validities were determined, just as Cronbach's Alpha was used to determine the reliability of the instruments in the Nigerian population. After a maximum of 20 min, the instruments were retrieved from the patients and the pharmacist took their medical and prescription notes to take down other important patient demographic and therapy details. Patients were then provided some counselling tips on the illness management and medication adherence.

Data analysis

Analysis was conducted using the IBM SPSS Version-25. The effect of demographics and clinical information on the level of adherence seen in each of the two questionnaires were analyzed by the using the aggregated summed scores of all patients. The MARS-5 score range was 5–25; with respondents having scores ≥ 15 termed as 'adherent' and < 15 as 'non-adherent'. The CQR score range was 5–20; respondents with scores ≥ 11 termed as 'adherent' and < 11 as 'non-adherent'. The cut-off points for dichotomization of both scales were selected based on the least possible median adherent scores of 15.0 and 11.0. Independent sample *t*-test and Analysis of Variance was employed in mean difference analysis for two and three grouped variables, respectively. Correlation analysis was conducted using the Pearson correlation for the determination of the intercorrelation and reliability estimation of both MARS and CQR. All significant values were put at $P < 0.05$.

Ethical approval for this study was received from the Ethics and Publication Review Committee of the National Orthopedic Hospital, Enugu.

Results

Rheumatoid arthritis patients' socio-demographic characteristics

One hundred and 69 outpatients agreed to participate and completed the survey within the study period. Majority of the patients with RA were female (62.7% of sample) and those of the age of 50 and above accounted for over 75% of the sample. A higher proportion of the patients were married and living with their spouses (52.4%), had tertiary education (42.7%) but nearly a third (60.6%)

earned less than 50 000 N (less than 140 USD monthly). Results are summarized in Table 1.

Arthritic patients' medical and medication details

A quarter of RA patients reported being previously admitted as an inpatient in a hospital. Majority of these patients reported they were in moderate (38.3%) or severe (47.9%) pain. Over half of the arthritic patients surveyed had been on their medications for over a year (55.6%). These patients reported that they were prescribed an average of six medicines in their current visit but pharmacist's data revealed an average of nine medicines per patient in the current visit. The pharmacists identified nearly two-thirds (63.9%) of the prescriptions to contained complex regimens, that is, containing more than two different dosage regimen. Nearly all patients (97.0%) were taking a form of NSAIDs while opioids were prescribed 72% of patients. Results on drug and patient factors are presented in Table 2.

Medication adherence measure

For the MARS, aggregated MARS summed scores (minimum 5 and maximum 25) showed 11.8% ($n = 20$) as adherent (≥ 15) and 88.2% ($n = 149$) as non-adherent. For specific items, as much as 82.3% of arthritic patients often/always surveyed took lower doses of their pain medicines than prescribed. Nearly similar percent (81.0%) altered the doses of their pain medications. Five of every ten RA patients (53.8%) said they stopped their medications and six of every ten (63.9%) often and always forgot to take their pain medications. These results and item mean scores are presented in Table 3.

Regarding adherence scores on the Compliance Questionnaire for Rheumatology, the CQR-5 identified 51.5% of patients are 'adherent' (scores of 11–20) and 48.5% as 'low adherents' (< 11). When asked if they took their medications because they would have fewer problems, 34.6% disagreed. Also, as much as 58.1% disagreed that they didn't dare miss their medications. Nearly all the patients said they didn't take their medicines because of the

confidence they had in their doctor (91%) or because of his instructions (98.2%). Table 4 also presents these results as well as each CQR item mean scores.

Factors influencing rheumatoid arthritis patient non-adherence

For the five-item MARS, being a male patient ($P = 0.005$), being of an older age, that is, greater than 45 years ($P < 0.0001$), and being prescribed a complex dosage regimen ($P < 0.035$) were associated with lower levels of adherence among these RA patients.

No patient or drug related factor significantly influenced the adherence levels of RA patients as reported with the five-item CQR (Table 5).

Reliability and correlation of medication adherence report scale and compliance questionnaire rheumatology

A Cronbach alpha of 0.856 for MARS and 0.685 for CQR was reported. Also, a correlation and reliability analysis of the three instruments showed a significant but weak positive correlation between MARS-5 and CQR-5 ($r = 0.217$, $P = 0.005$). (Table 6)

Table 2 Arthritic patients' medical history and current pill burden

Characteristics	<i>n</i>	%
Patient reported data		
Previous admission as an inpatient?		
Yes	43	25.4
No	126	74.6
Pain severity		
Mild	23	13.8
Moderate	64	38.3
Severe	80	47.9
How long on antirheumatic medications?		
Less than 6 months	35	20.8
6 months to 1 year	39	23.1
More than 1 year	94	55.6
Daily pill burden (tablets)		
1–5	74	46.8
6–10	72	45.6
Above 10	12	7.6
Mean \pm SD	6.1 \pm 3.6	
All drugs sourced from this hospital?		
Yes	115	69.7
No	50	30.3
Pharmacist reported data		
Patients' daily pill burden (tablets)		
0–5	19	11.5
6–10	92	55.4
Above 10	55	33.1
Mean \pm SD	9.6 \pm 4.2	
Prescriptions with complicated regimens?		
Yes	106	63.9
No	60	36.1
Antirheumatic drugs prescribed ^a		
Non-selective NSAIDs	81	47.9
Selective NSAIDs	83	49.1
DMARDs	0	0.00
Opioids	122	72.2
Corticosteroids	0	0.00

Percentages presented are valid percentages. ^aPer total number of patients.

Table 1 Demographics of outpatients with RA ($N = 169$)

Characteristics	<i>n</i> (%)
Gender	
Male	63 (37.3)
Female	106 (62.7)
Age category	
18–29	7 (4.1)
30–49	32 (18.9)
50–69	69 (40.8)
Above 70	61 (36.1)
Marital status	
Not married	21 (12.5)
Married but living singly	4 (2.4)
Married and living together	88 (52.4)
Widowed	55 (31.0)
Educational status	
Primary education	61 (37.2)
Secondary education	33 (20.1)
Tertiary education	70 (42.7)
Monthly earnings (in Naira)	
Less than 50 000	80 (60.6)
50 001–100 000	22 (16.7)
More than 100 000	30 (17.8)

Percentages presented are valid percentages.

Table 3 Patient responses to the MARS-5

MARS-5 Scale items	Always	Often	Sometimes	Rarely	Never	Mean (SD)
I forget to take my pain medicine	36 (21.3)	72 (42.6)	53 (31.4)	7 (4.1)	1 (0.6)	2.20 ± 0.8
I alter the dose of my pain medicine	89 (53.0)	47 (28.0)	27 (16.0)	4 (2.4)	1 (0.6)	1.69 ± 0.9
I stop taking my pain medicine for a while	46 (27.2)	45 (26.6)	65 (38.5)	13 (7.7)	0(0)	2.27 ± 0.9
I decide to miss out on a dose of my pain medicine	85 (50.3)	40 (23.7)	33 (19.5)	11 (6.5)	0(0)	1.82 ± 0.9
I take less pain medicine than the doctor told me to	102 (60.4)	37 (21.9)	27 (16.0)	2 (1.2)	1(0.6)	1.60 ± 0.8

Always = 1, Never = 5; Lower mean values suggest lower adherence.

Table 4 Patient responses to the CQR-5

CQR-5 Scale items	Definitely don't agree	Don't agree	Agree	Definitely agree	Mean ± SD
I take my antirheumatic medicines because I then have fewer problems	3 (1.9)	53 (32.7)	84 (51.9)	22 (13.6)	2.8 ± 0.7
I definitely don't dare to miss my antirheumatic medications	12 (7.2)	85 (50.9)	57 (34.1)	13 (7.8)	2.4 ± 0.7
My medicines are always stored in the same place and that's why I don't forget them	24 (14.4)	111 (66.5)	29 (17.4)	3 (1.8)	2.1 ± 0.6
I take my medicines because I have complete confidence in my doctor	44 (26.5)	107 (64.5)	15 (9.0)	0 (0)	1.8 ± 0.6
What the doctor tells me, I hang on to	48 (28.7)	116 (69.5)	3 (1.8)	0 (0)	1.7 ± 0.5

Definitely don't agree = 1, Definitely agree = 5; Lower mean values indicate lower levels of adherence to medications.

Discussion

This study assessed the level of adherence of patients with RA to their pain medications. A large proportion of the patients being treated for RA in this Nigerian hospital were non-adherent to their medications as captured and classified by the two instruments used. The patient's age, male gender and complexity of their medication regimen were also found to influence the non-adherent behaviours of these RA patients.

A greater percent of the patients with RA in this setting were females and were elderly. Nearly two-thirds of the RA patients visiting this hospital were females similar to other studies.^[4, 13, 14] This could be reflective of the population distribution in this region of the country, as this hospital is the only referral orthopaedic medicine hospital in the entire Eastern region. Some other studies have however reported much higher proportions of female patients with RA, ranging from as high as 78.1–82.5% compared to that of our study.^[7, 15] Similarly, majority of the patients in this study were aged, above 50 years; a consistent trend with most chronic diseases.

Adherence measures

The level of self-reported adherence to anti-arthritic medications in this study was very poor. Non-adherence levels measured with the MARS-5 revealed that not a single patient was completely adherent and as nearly as nine of every ten patients were poor adherents. Also, with the CQR-5, as nearly half the RA patients surveyed were not adherent, with only two patients reporting as much as 80% adherence. This level of non-adherence has not been often reported in any other study considering adherence in rheumatology. These prevalent non-adherent rates are of great concern despite using a far much lower cut off compared to other studies. Non-adherence to RA medications measured with MARS-5 tool has been put at 33% by some authors.^[13] As for non-adherence measures using the CQR-5, as little as 29.7% has been previously recorded.^[13] However, a longitudinal study which focused on the effect of time and level of non-adherence observed non-adherence rates to RA medication similar to that

reported in this study and remained same over time.^[14] In a study conducted among 228 RA patients on DMARD, between 32 and 40% non-adherence were reported with the CQR and MARS tools, respectively.^[16] The authors further opined that such high rates of non-adherence could result to unnecessarily high levels of disease activity and loss of function. Majority of the patients in this study were elderly and were prone to having a comorbid disease and a higher disease burden which could have influenced their level of adherence.

Factors influencing adherence to antirheumatic medications

Our findings, specifically with the MARS-5 suggest as with other studies, that male RA patients were less adherent to their antirheumatic medications than the female patients. A recent cross-sectional study conducted in Austria, reported having significantly more women and less men being adherent to their RA medications.^[7] A longitudinal study of adherence to any pain medication for RA patients reported consistently lower adherence levels among males than females.^[17] Also in another longitudinal study conducted ten years later among RA patients on refilled medications for Etanercept or adalimumab, female patients were significantly more adherent.^[18] This adherence pattern in RA patients is quite worrisome as female patients are known to have better self-care practices, and adopt better health promoting strategies compared to their male counterparts.^[19, 20] Female patients have also been reported to easily embrace new disease and stress coping styles to their needs.^[21] There have also been other studies conducted among RA patients on NSAIDs and DMARDs that did not show any effect of gender on medication adherence.^[16, 22]

Older RA patients in this hospital were less adherent with their medications. The age of an RA patient as a risk factor for adherence is still not conclusive. Various authors have remained on the divide of the discuss with some suggesting older patients were more adherent and others favouring the younger patients.^[16, 17, 22–24] Studies have reported older RA patients exhibiting poorer adherence to the

Table 5 Influence of patient and medication factors on levels of non-adherence to RA medications using two adherence instruments

	N	MARS-5 n (%)	CQR-5
Median cut off point	–	15	11
Non-adherence	169	149 (88.2)	81 (47.9)
Gender	–	P = 0.005	P = 0.307
Male	63	61 (96.8)	28 (45.2)
Female	106	88 (83.0)	53 (50.5)
Age category	–	P < 0.0001	P = 0.254
20–30	6	5 (83.3)	1 (16.7)
30–45	27	17 (63.0)	15 (55.6)
45–60	59	55 (93.2)	25 (43.9)
60–75	52	48 (92.3)	25 (48.1)
Above 75	24	23 (95.8)	15 (62.5)
Educational status	–	P = 0.121	P = 0.349
Primary education	61	58 (95.1)	32 (53.3)
Secondary education	33	28 (84.8)	12 (37.5)
Tertiary education	70	59 (84.3)	33 (42.9)
Monthly earnings (in Naira)	–	P = 0.566	P = 0.637
Less than 50 000	80	72 (90.0)	40 (50.6)
50 001–100 000	22	18 (81.8)	9 (40.9)
More than 100 000	30	26 (86.7)	13 (43.3)
Previously an inpatient?	–	P = 0.399	P = 0.550
Yes	43	37 (86.0)	21 (48.8)
No	126	112 (88.9)	60 (48.4)
How long on antirheumatic medications?	–	P = 0.488	P = 0.184
Less than 6 months	35	29 (82.9)	19 (57.6)
6 months to 1 year	39	34 (87.2)	22 (56.4)
More than 1 year	94	85 (90.4)	40 (42.6)
Daily pill burden (tablets)	–	P = 0.269	P = 0.767
0–5	74	63 (85.1)	34 (47.2)
6–10	72	65 (90.3)	36 (50.0)
Above 10	12	12 (100)	7 (58.7)
All drugs sourced from this hospital?	–	P = 0.395	P = 0.464
Yes	115	100 (87.0)	54 (47.8)
No	50	45 (90.0)	25 (50.0)
Pain severity	–	P = 0.183	P = 0.638
Mild	23	20 (87.0)	12 (54.5)
Moderate	64	60 (93.8)	28 (43.8)
Severe	80	67 (83.8)	39 (49.4)
Daily recorded pill burden (tablets)	–	P = 0.647	P = 0.939
0–5	19	17 (89.5)	8 (44.4)
6–10	92	79 (85.9)	43 (47.3)
Above 10	55	50 (90.9)	27 (49.1)
Prescriptions with complicated regimens?	–	P = 0.035	P = 0.552
Yes	106	98 (92.5)	50 (48.1)
No	60	49 (81.7)	29 (48.3)

Differences in the proportion of non-adherent (reported) and adherents was conducted using chi-square tests; $P < 0.05$ was considered statistically significant (highlighted as bold P -values).

medications.^[22, 23] Reasons such as higher presence of comorbidities and a complex medication regimen associated with older patients tend to worsen adherence measures in all diseases. Several other studies conducted among arthritic and other chronically ill patients, have reported higher adherence measures with older patients in contrast to findings in this study.^[7, 14–16, 24]

Table 6 Intercorrelation and reliability estimation of the two different questionnaire scales for adherence measure among rheumatology patients

	Range of scores	Cronbach's alpha	Correlation (r)	
			MARS-5	CQR-5
MARS-5 5–25	0.856	1		0.217 (0.005)
CQR-5 5–20	0.685		0.217 (0.005)	1

$P < 0.05$ is considered significant. Pearson correlation.

In this study, medication complexity (defined as any polypharmacy with more than two different dosing regimen) was significantly associated with poorer adherence. This finding has not been directly reported in any RA study to our knowledge. A lone study that considered 'unclear dosing direction' as a possible predictor for adherence reported a nil association.^[25] Compliance to medication for arthritis has been shown to be 78% for once a day dosing, 72% for twice, 64% for thrice and 60% for four times a day, suggestive of an inverse relationship of daily regimen and adherence.^[26] A prescription with a mixture of any of these regimens would suggest a further worsening of the overall medication compliance. More recent studies have rather focused more on number of medications, number of daily doses, and side effects. These studies have all reported a nil significant effect of these therapy related factors on patient adherence to RA medications.^[15, 22, 27] It is recommended that while RA patients tend to be prescribed multiple drugs, simpler and less frequent and similar dosing regimen should be used when possible. This view has been supported by other interventions in non-RA patients which resulted in better compliance to chronic disease medications.^[28]

Educational level of the RA patient and number of drugs prescribed and taken, were not associated with non-adherence in this study. A number of studies among RA patients have also reported same pattern of education not being associated with adherence.^[24, 29] However, in contrast to some other studies, lower educational status among RA patients in this study has been identified as a risk factor for poor adherence.^[5, 25] Our findings also revealed that higher pill burden did not have an effect on adherence among RA patients and this has been shown in other studies.^[7, 27, 30] It is thought that increasing number of drugs should adversely affect adherence and the authors think this finding needs to be restudied among larger samples of patients and focus on classes of medications prescribed.

This study did not consider patient and condition-related factors such as perceived health, self-efficacy, disease activity, coping strategies, attitude to medication, knowledge and attitude to disease. These factors have been reported to be significantly associated with RA patient medication adherence in various studies.^[5, 17, 19]

Relationship between the adherence instruments

Current literature has shown that there is limited understanding about the factors that influence medication adherence in patients with RA. In addition, the lack of an established cut-point to indicate non-adherence on self-report measures of medication adherence limits the ability to compare findings across studies. This study also compared adherence measures across the two instruments employed. There weak correlation between the specific tool, CQR and the other generic tool MARS has also been reported with other studies.^[13] Though the weak correlation was significant, it signifies that both instruments might not be measuring same aspects of adherence. This has also been suggested by another study reporting on the psychometric properties of both instruments.^[31] The MARS discriminated

poor adherent much more than the CQR, but it is not clear if this weak correlation between both tools would improve over time. Importantly too, both instruments used in this study showed very good internal consistency among these RA patients and thus can be used reliable among patients that have similar demographic or socioeconomic characteristics.

Implications of findings

Immediate, gradual but guided interventions to improve the level of adherence in RA patients in this setting would prove worthwhile. A focus on physician-pharmacist medication intervention protocol to reduce medication dosage complexity should be generated and institutionalized, to reduce the high levels of non-adherence in patients with several dosage regimens in their daily medication regimen. Also, the uniqueness of the male and older RA patients should be taken into consideration while incorporating the participation of their spouses, partners or family relatives in their care process. Thereafter a longitudinal study of the effects of these interventions can be conducted to monitor their effects and necessary adjustments effected.

Both instruments used in this study have shown robustness and their use in this type of population and geographical location. Physicians, nurses and pharmacists providing care to RA patients are encouraged to administer these easy to complete questionnaires before, during or after hospital consultations. Also, these questionnaires could be administered over a period of time to evaluate any changes in adherence in the absence of more direct methods such as measurement of drug in blood.

Study limitations

The small sample size may not have provided sufficient statistical power to determine the influence of these variables on medication adherence. Future multicenter and longitudinal studies with a larger sample size might help address this limitation. This study was conducted in one hospital which serves only a region of the country thus the demographics of these participants only reflect those of people living in that region, and not the entire country. The use of self-reported scales to measure medication adherence might have limited the validity of its results. Respondents' bias to conform to social desirability is often common but we think the high prevalence of the poor adherence points otherwise.

The use of the newly validated 5-item Medication Adherence Report Scale (MARS-5) and CQR among Nigerian RA patients is probably the first attempt to the best of the researchers' knowledge.

Conclusion

The level of adherence among RA patients assessed in the study was very poor with less than half of the cohort reporting 'good' adherence to their medications in both survey questionnaires. Older age of the patient, being of a male gender and complexity of the medication regimen were significantly associated with their non-adherence to their medications. There is an urgent need for a hospital driven interventional educational strategy aimed at improving medication adherence among these patients, and goal targeted interprofessional collaboration between physicians, nurse and pharmacists to make prescriptions simpler could prove very useful.

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Author Contributions

C.M.U., J.M.O.: conceptualization of study and its design; O.G.I., C.M.U.: data collection and curation; C.M.U., K.C.A., I.A.: data analysis and interpretation; K.C.A., I.A., O.G.I.: initial draft of manuscript; C.M.U., J.M.O.: critical revision of final manuscript; C.M.U., O.G.I., K.C.A., I.A., J.M.O.: final approval of manuscript.

Data Availability Statement

All data collected and analyzed for this study have been deposited at the Drug Information Library of the Department of Clinical Pharmacy, University of Nigeria on behalf of the Pharmacy Practice and Pharmaceutical Care Research Group. Any reader seeking to have access to these data should send a mail to the corresponding author.

Conflict of Interest

The authors have no interest related to this study to declare.

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