

HIV client's satisfaction with home delivery of antiretrovirals in Abuja, Federal Capital Territory, Nigeria: A pilot study

Ajagu Nnenna^{1*}; Offu Ogochukwu¹; Oluigbo Emeka Kennedy², Ani Njideka Ifeoma³, Okolo Kenneth Obinna³, Nduka Sunday¹; Ekwunife Ikechukwu Obinna^{1,2}

¹Department of Clinical Pharmacy and Pharmacy Management, Nnamdi Azikiwe University, Awka, Nigeria.

²Department of Clinical Pharmacy and Biopharmaceutics, Enugu State University of Science and Technology, Agbani, Nigeria.

³Department of Pharmacology and Toxicology, Enugu State University of Science and Technology, Agbani, Nigeria.

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***Corresponding Author:** Ajagu Nnenna, Department of Clinical Pharmacy and Pharmacy Management, Nnamdi Azikiwe University, Awka, Nigeria. +234803546093.
Email: ajagunnenna@yahoo.com

Abstract

Background: Human immunodeficiency virus (HIV) infected patients are faced with the challenge of frequent visits to an already congested Nigerian hospital for antiretroviral (ARV) refills. Although various decentralization strategies have been adopted to reduce frequent visits to the hospital for antiretroviral (ARV) refills, none has analyzed clients' satisfaction with home delivery of antiretrovirals in Nigeria.

Objective: This study aims to evaluate HIV-infected patients' satisfaction with Home Delivery of antiretrovirals in Nigeria
Method: The study is a cross-sectional pilot study carried among people living with HIV that are virally suppressed in Abuja Nigeria, between October 2020 to December 2020. Two hundred and ten self-administered questionnaires were distributed conveniently during the regular antiretroviral home refill by the home delivery personnel. Descriptive statistics were conducted for the demographics. The variables were categorized into domains and analyzed into groups. Cross tabulation was used to show the relationship between variables and among the demographics. Differences in means were analyzed with T-Test and analysis of variance, a p-value of <0.05 was considered to be significant.

Result: All distributed questionnaires were filled and retrieved. All the items in the satisfaction with the home delivery questionnaire showed an internal consistency of ≥ 0.7 . The majority of the respondents are self-employed and are mostly from Abaji and Kwali area council. The t-test on demographic characteristics against location revealed a statistical difference in the mean with the P-value <0.01 and S.D =2.1 for all the area councils. Generally, most of the clients were satisfied with the antiretroviral delivery model.

Keywords: Patient satisfaction; home delivery; antiretroviral; HIV.

Introduction

Over the past decades, highly active antiretroviral therapy (HAART), has transformed human immunodeficiency virus (HIV) infection from being a deadly disease to a chronic illness [1]. This is possible because effective management allows an infected individual to survive till old age [2, 3] resulting in a large number of stable patients on HAART with minimal disability life adjusted years. Globally, about a 38.8million people live with HIV infection [5], but the hardest-hit region in the world is sub-Saharan Africa with more than two-thirds of this population living with HIV [6], Nigeria accounts for 1.9 million people infected with the virus [7].

World Health Organization (WHO) guidelines categorized different decentralization models as (i) partial decentralization, where patients start ART at central hospitals and can be down referred to PHCs when stable; (ii) full decentralization, where patients start and continue ART at PHCs; and (iii) decentralization beyond health facilities, where trained volunteers deliver antiretrovirals to people in their homes [7], consequently, some countries have adopted the home delivery model as one of the options to scale up access to antiretrovirals. The home delivery model improves patients' choice for care as well as minimizes interruption to patient's busy schedules [9]. A study was conducted in Africa in which the home delivery model of

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antiretroviral was exploited and it was observed that viral suppression in these patients increased from 54% to more than 70% [9-15].

In 2018, Smith et al evaluated patient satisfaction with home delivery of antiretroviral (ARV) medication and reported that patients showed a positive attitude towards the home delivery scheme. At the time of this research, patient satisfaction with this model has not been evaluated in any part of Nigeria [5]. Studies have also shown that the quality of care a patient receives is associated with patient outcomes [16] and, one such outcome is patient satisfaction [16].

Patient satisfaction is a multidimensional concept that reveals the quality of service provided by healthcare providers as well as the degree to which the expectations of patients are met [17], there are different definitions of patient satisfaction. Schommer and Kucukarslan [18] defined it as an equity-based assessment of a service or product but Gourley et al [19], defined it as a predictive measure of the possibility that a patient will continue to use the service of a particular provider. In a nutshell patient satisfaction is the link between services provided and patients' needs, it also measures patients' perspective on the services provided [20]. This study, therefore, aims to evaluate HIV client satisfaction with home delivery of antiretrovirals.

Developing Questionnaire on Satisfaction with Antiretroviral Home Delivery (SAHD)

Developing Questionnaire on Satisfaction with Antiretroviral Home Delivery (SAHD) Developing Questionnaire on Satisfaction with Antiretroviral Home Delivery (SAHD). The questionnaire was developed by reviewing published literature on researches conducted to investigate patients' satisfaction with home delivery of health care services. Studies on patients' satisfaction with HIV care and treatment services were also reviewed [21-27] Several instruments identified had about 9 dimensions namely: 1) Technical quality and competence, 2) Facilities and equipment, 3) Interpersonal skills, 4) Communication and Patient education, 5) Financial aspects, 6) Waiting and spending time, 7) Services availability, accessibility, and convenience 8) Confidentiality and privacy 9) General Satisfaction. Four dimensions were identified as relevant to home delivery of antiretroviral and modifications were done to suit this study. Patient education, convenience, confidentiality, general satisfaction was be used as domains in this research. Lastly, scaling of the items was done such that items were scored on a five-point Likert scale, from,1, strongly disagree, to 5, strongly agree. This Likert scale was used because of the level of literacy of the population of the study, as it will clearly show their opinion about home delivery of antiretroviral. The adaptation of the questionnaire was done by one of the authors who has a lot of experience on the topic and has been involved in counseling and dispensing drugs to HIV clients in ART clinics in Nigeria. We constructed a pooled list of 19 items and then reduced it to 13 items based on relevance. A 13-item questionnaire was designed with four dimensions namely (1) Patient education, (2) Convenience (3) Confidentiality, and (4) General satisfaction. Questions containing patient sociodemo-

graphic data were also included. The items were subjected to face validity by an expert for professional judgment on ambiguity, relevance. and sentence structure. The experts were composed of five lecturers of the Department of Clinical Pharmacy and Pharmacy Management, Nnamdi Azikiwe University, Awka, three pharmacists trained in the care of HIV-infected patients, and a statistician. Cronbach's alpha was used to assess the reliability of the instrument and it revealed that the items have an acceptable alpha value of 0.73. Item-total correlation value of ≥ 0.3 was retained. The data collected from the pilot study were analyzed as well.

Study design and participant recruitment

The study is a cross-sectional pilot study where questionnaires were distributed to ART clients that enrolled in the decentralization of the home delivery model of ARV in the hospital. From the HIV clinic, 530 clients receive ARV refill at home and come to the hospital for comprehensive care every six months. The pharmacist in the hospital through phone calls contacts the clients conveniently and explained the detail and purpose of the study and asked if they will be willing to participate in the study. Those that were willing to participate received the informed consent forms and the questionnaire at home during the next refill.

Inclusion criteria

The study includes participants between ages 18 years to greater than 48 years and receives antiretrovirals at home. Children, pregnant women, in-patients, patients receiving ART within the hospital premises, and the very ill patients of other subspecialties were excluded. Those who could not give consent were also excluded from the study.

Study Setting

The study was conducted at St, Mary hospital Gwagwalada area council, Abuja. The hospital has HIV/AIDS comprehensive center, and it provides HAART to HAART care to HIV-positive patients.

Sample size

Using a web-based sample size calculator, the sample size was calculated with a confidence level of 95% and a margin of error at 5% a sample size of 196 respondents from a total sample frame of 530. The attrition rate was set at 5% of the sample size (35), which gave a total sample size of 210. Questionnaires were administered to a total of 210 adults. There was a 100% response rate and written informed consent to participate in the study was obtained from all participants before participation.

Data Analysis

The questionnaire when retrieved was checked for completeness, coded on an excel sheet, and analyzed using the Statistical Package for Social Sciences (SPSS 26, Chicago IL, USA). The retrieved questionnaire was double-checked for consistency with the hard copy by one of the investigators. The demographic data was represented by frequency (percentage)

or mean ± standard deviation; cross-tabulation was used to determine the relationship among the demographics. Also, a Chi-test and analysis of variances were used to determine the differences in the mean.

Ethical issues

The research was approved by the hospital management. Informed consent was obtained from those that agreed to participate in the study. Participants’ data will be kept confidential by assigning code instead of using names.

Results

The demographic characteristics of the respondents (Table 1) show that the majority of the clients are female (70%) and most of them were within the age range of 38-47(74.8%). While more than half of them are employed in the private sector. Most of the participants are married as well as most of them have a form of tertiary education. It is worthy to note that most of the respondents reside at Abaji (31.9%).

The majority of the clients responded that they receive a form of health education from the home delivery personnel when the ARV medication is been delivered to them but h a few participants (3.2%), responded that the HDP does not count the leftover pill (if any). About 76.8 % of the respondents affirmed they refill their medication easily from the HDP. While only 4.0 % said refill from the HDP and the hospital makes no difference to them. The level of advice they receive from the HDP has a percentage mean health education score of 3.9. Most of the respondents (76.8%) found it easy to contact the HDP for any health issues at any time. In the confidentiality, most of

Table 1: Demographic characteristics of respondents.

Variables		Frequency (%)
Gender	Male	63 (30.0)
	Female	147 (70.0)
Age	18-37	22 (10.5)
	38-47	157(74.8)
	>48	31(14.8)
Education	No Formal Education	2(1.0)
	Primary School Education	3(1.4)
	Secondary School Education	90(42.9)
	Higher institution	115(54.8)
Occupation	Government Employee	64(29.9)
	Private Employee	79(37.6)
	Self-employed	51(24.3)
	Unemployed	16(7.6)
Marital Status	Single	42(20.0)
	Married	124(59.0)
	Divorced	27(12.9)
	Widowed	17(8.1)
Location	Abaji	67(31.9)
	Abuja Municipal	17 (8.1)
	Gwagwalada	13(6.2)
	Kuje	21(10.0)
	Bwari	46(21.9)
	Kwali	46(21.9)

Table 2: Responses of respondents on satisfaction with antiretroviral home delivery services (SAHDS).

Variable	Response (%)			Mean/STD
	No	Not Sure	Yes	
Health Education				
I get advice on my well-being	0 (0.0)	6 (2.4)	204 (81.6)	3.9 (0.3)
The side effect(s) of my medication(s) (if any) are explained to me by the home delivery personnel	0 (0.0)	10 (4.0)	200 (80.0)	3.9 (0.4)
The home delivery personnel helps me count my pill (if any left)	8 (3.2)	58 (23.2)	14 (57.6)	3.3 (1.0)
The home delivery personnel never inform me of my appointment and refills	190 (7.6)	20 (8.0)	0 (0.0)	0.6 (0.7)
Convenience	Convenient	Not Sure	Very Convenient	
My medications are refilled easily at home	1(0.4)	12 (4.8)	197(78.8)	3.8 (0.5)
I prefer to refill my medication in the hospital instead	192 (76.8)	13 (5.2)	4 (1.6)	0.7 (0.7)
I have easy contact with the home delivery personnel	9(3.6)	9(3.6)	192(76.8)	3.9 (0.5)
My medications were not delivered promptly to me by the home delivery personnel	207(83.2)	2(0.8)	0(0.0)	0.3(0.5)
Confidentiality	Confidential	Not Sure	Very Confidential	
I trust the home delivery personnel on my health issues	0(0.0)	11 (20.1)	199 (79.6)	4.0 (0.2)
The home delivery personnel do not keeps my health issues private	208(73.2)	2 (0.8)	0 (0.0)	4.0(0.2)
I have enough privacy in my home to receive drugs	16(6.4)	0 (0.0)	194 (93.6)	3.9(0.3)
I like how my drug is packaged and delivered	10(4.0)	0(0.0)	200(96.0)	4.0(0.2)
General Satisfaction	Satisfied	Not Satisfied		
I am satisfied with the service of the home delivery personnel	192(82.8)	18(7.2)		3.9(0.3)

Table 3: Relationships between Socioeconomics factors and Location.

Socio-economic factors		Abaji	Abuja municipal	Gwagwalada	Kuje	Bwari	Kwali	N=210 %=100
Gender	Female	37(17.6)	16(7.6)	13(6.2)	21(10.0)	28(13.3)	32(15.2)	147(70.0)
	Male	30(14.3)	1(0.5)	0(0.0)	0(0.0)	18(8.6)	14(6.7)	63(30.0)
P value < 0.01*, SD=2.1, SEM=0.2								
Age	18-37yrs	5(2.3)	4(1.4)	2(1.0)	1(0.5)	6(2.9)	6(2.9)	24 (12.5)
	38-47yrs	52(24.8)	12(5.7)	8(3.8)	17(8.1)	32(15.2)	36(17.1)	157(74.8)
	>48yrs	10(4.8)	1(0.5)	3(1.4)	3(1.4)	8(3.8)	4(3.8)	29(13.8)
P value <0.01*, SD =2.14. SEM = 0.2								
Education	No Formal Ed	1(0.5)	0(0.00)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	1(0.5)
	Primary School	1(0.5)	1(0.5)	1(0.5)	1(0.5)	0(0.0)	1(0.5)	3(1.4)
	Secondary School	27(12.9)	5(2.4)	3(1.4)	7(3.3)	23(11.0)	25(11.9)	90(42.9)
	Higher Institution	38(18.1)	11(5.2)	10(4.8)	13(6.2)	23(11.0)	20(9.5)	115(54.8)
P value <0.01*, SD =2.2, SEM= 0.2								
Occupation	Govt. employee	26(12.3)	4(1.9)	3(1.4)	2(1.0)	12(5.7)	8(3.8)	48(22.9)
	Private sector	23(11.0)	8(3.8)	3(1.4)	9(4.3)	19(9.0)	17(8.1)	79(36.6)
	Self Employed	15(7.1)	3(1.4)	1(0.5)	4(1.9)	13(6.2)	15(7.1)	51(24.3)
	Unemployed	3(1.4)	2(1.0)	3(1.4)	5(2.4)	2(1.0)	1(0.5)	16(7.6)
P value <0.01*, SD=2.2, SEM=0.2								
Marital Status	Single	8(3.6)	1(0.5)	3(1.4)	3(1.4)	3(1.4)	6(2.9)	24(11.4)
	Married	43(20.5)	13(6.2)	8(3.8)	13(6.2)	32(15.2)	33(15.7)	142(67.6)
	Divorced	13(6.2)	3(1.4)	0(0.0)	3(1.4)	7(3.3)	1(0.5)	27(12.9)
	Widowed	3(1.4)	0(0.0)	2(1.0)	2(1.0)	4(1.9)	6(2.9)	17(8.1)
P value<0.01* SD 2.1 SEM = 0.2								

*t-test, ^post hoc, (mean difference is significant at 0.05), SD, Standard Deviation SEM standard error of mean.

Table 4: HIV Clients responses based on Location.

Variable		Abaji	Abj-M	Gwagwalada	Kuje	Bwari	Kwali	N (%)	P value
Health Education									
I get advice on my well-being	Yes	4(1.9)	0(0.0)	1(0.5)	1(0.5)	0(0.0)	0(0)	6(2.9),	0.2*
	No	63(30)	17(8.1)	12(5.7)	20(9.5)	46(21.9)	46(21.9)	204(97.1)	
The side effect(s) of my medication(s) (if any) are explained to me by the home delivery personnel	Yes	4(1.9)	1(0.5)	3(1.4)	2(1.0)	0(0.0)	0(0.0)	10(4.8)	<0.01*
	No	63(30)	16(7.6)	10(4.8)	19(9.0)	46(21.9)	46(21.9)	200(95.2)	
The home delivery personnel helps me count my pill (if any left)	Yes	19(9.1)	7(3.3)	7(3.3)	5(2.4)	12(5.8)	16 (7.6)	67(31.6)	0.4*
	No	48(22.9)				34(16.2)			
The home delivery personnel never inform me of my appointment and refills	Yes	4(1.9)	1(0.5)	0(0.0)	4(1.9)	5(2.4)	6(2.9)	20(9.5)	0.5*
	No	63(30.)	16(7.7)	13(6.2)	17(19.6)	41(8.1)	34(16.2)	190(90.5)	
Convenience									
My medications are refilled easily at home	C	1(0.5)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	1(0.5)	0.6*
	NS	4(1.9)	1(0.5)	0(0.5)	3(1.4)	0(0.0)	3(1.4)	12(5.7)	
	VC	62(29.5)	16(7.6)	12(5.7)	18(8.6)	46(21.9)	43(30.5)	197(93.8)	
I prefer to refill my medication in the hospital instead	C	26(12.4)	7(3.3)	8(3.8)	12(5.7)	10(4.8)	18 (8.6)	81(38.6)	<0.01*
	NS	8(3.8)	1(0.5)	1(0.5)	1(0.5)	1(0.5)	1(0.5)	13(6.2)	
	VC	33(15.7)	8(3.8)	4(1.9)	8(16.7)	25(11.9)	25(11.9)	113(53.8)	
I have easy contact with the home delivery personnel	C	5(2.4)	0(0.0)	0(0.0)	2(1.0)	0(0.0)	1(0.5)	9(4.3)	0.5*
	NS	5(2.4)	1(0.5)	2(1.0)	0(0.0)	1(0.5)	0(0.0)	1(0.5)	
	VC	57(27.1)	16(7.6)	11(5.2)	19(9.0)	45(21.4)	44(21.0)	192(91.4)	
My medications were not delivered promptly to me by the home delivery personnel	C	13(6.2)	3(1.4)	5(2.4)	4(1.9)	8(3.8)	13(6.2)	7(3.4)	<0.05*
	NS	1(0.5)	3(1.5)	0(0.0)	2(1.0)	0(0.0)	1(0.5)	46(21.9)	
	VC	53(25.2)	11(5.2)	8(3.8)	15(7.1)	37(17.6)	33(15.7)	93(74.8)	

Confidentiality									
I trust the home delivery personnel on my health issues	Cf	4(1.9)	1(0.5)	2(1.0)	2(1.0)	0(0.0)	2(1.0)	11(5.2)	0.3*
	NS	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	
	Vcf	63(30.0)	16(7.6)	11(5.6)	19(9.0)	46(21.9)	44(21.0)	119(94.8)	
The home delivery personnel do not keep my health issues private	NS	4(1.9)	3(1.4)	0(0.0)	0(0.0)	3(1.4)	3(1.4)	13(6.2)	0.4*
	Cf	5(2.4)	2(1.0)	3(1.4)	4(1.9)	4(1.9)	4(1.9)	22(10.5)	
	Vcf	58(27.6)	12(5.7)	10(4.8)	17(8.1)	39(18.6)	39(18.6)	175(83.3)	
I have enough privacy in my home to receive drugs	Cf	7(3.3)	1(0.5)	2(1.0)	2(1.0)	0(0.0)	4(1.9)	16(7.6)	0.3*
	NS	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	
	Vcf	60(28.6)	16(7.6)	11(5.2)	19(9.0)	46(21.9)	42(21.9)	194(92.4)	
I like how my drug is packaged and delivered	Cf	4(1.9)	1(0.5)	2(1.0)	1(0.5)	0(0.0)	2(1.0)	10(4.8)	0.3*
	NS	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	
	Vcf	63(30.)	16(7.6)	11(5.2)	20(9.5)	46(21.9)	44(21.0)	200(95.2)	
General Satisfaction									
I am satisfied with the service of the home delivery personnel	NSt	8(3.8)	1(0.5)	2(1.0)	1(0.5)	3(1.4)	3(1.4)	18(8.6)	0.3*
	St	59(28.1)	16(7.6)	11(5.2)	20(9.5)	43(20.5)	43(20.5)	192(91.4)	

*P-value t-test(mean difference significant at 0.05). C-Confident, NS-Not sure, VC-Very confident, Cf -Confident, Vcf –Very Confident, NSt- Not Satisfied St- Satisfied.

Table 5: Relationship between clients’ demographics and occupation.

		Government employee	Private Sector employee	Self employed	Unemployed	Total	P value
Gender	Female	27(12.9)	56(26.7)	35(16.7)	14(6.7)	147(70.0)	0.26*
	Male	21(10.0)	24(11.5)	16(7.6)	2(1.0)	63(30.0)	
Age	18-37yrs	2(1.0)	11(5.3)	7(3.3)	4(2.0)	24(11.5)	0.01*
	38-47yrs	36(17.1)	72(34.3)	39(18.6)	10(4.8)	157(78.8)	
	>48yrs	10(4.8)	12(5.7)	5(2.4)	2(1.0)	29(13.8)	
Education	No formal Ed	0(0.0)	0(0.0)	0(0.0)	0(0.0)	2(1.0)	0.03*
	Primray Sc	0(0.0)	2(1.0)	0(0.0)	0(0.0)	3(1.4)	
	Secondary Sc	23(11.0)	33(15.7)	26(12.4)	26(12.4)	94(44.8)	
	Tertiary instit	25(11.9)	48(22.9)	25(11.9)	25(11.9)	115(54.8)	
Area council	Abaji	19(9.0)	30(14.3)	15(7.1)	3(1.4)	67(31.9)	0.25*
	Abuja Municipal	4(1.9)	8(3.8)	3(1.4)	2(1.0)	17(8.1)	
	Gwagalada	3(1.4)	6(2.8)	1(0.5)	3(1.4)	13(6.2)	
	Kuje	2(1.0)	10(4.8)	4(1.9)	5(2.4)	21(10.0)	
	Bwari	12(5.7)	19(9.0)	13(7.1)	2(1.0)	46(21.9)	
	Kwali	8(3.8)	22(10.5)	15(7.1)	1(0.5)	46(21.9)	

*t-test, ^post hoc. (the mean difference is significant at 0.05),

the participants responded that they trust the health personnel with their health issues. General satisfaction of 82.8% was seen among the respondents (see table 2).

It was also observed that most of the respondents are female from the Abaji council (17%). About 24% of the respondents are with an age range of 38-47yrs from Abaji council (24.8%). However, most of the respondents are self-employed from Abaji and Kwali council respectively (See table 3). As shown in the table it was seen that the t-test was done the demographic characteristic against location showed statistical differences in the mean with the P value<0.01* SD 2.1 SEM = 0.2 for all the area council.

Most of the respondents agreed that the HDP explains the side effect of the medication (if any) to them with significant differences in their mean at a p-value <0.01. There were also sig-

nificant differences in the mean at p-value <0.01 where 15.7% of the respondents from the Abaji area council disagreed that they preferred to refill their medication at the hospital. Most of the respondents from the Abaji area council (25.5%) also responded that they find the refill system very convenient for them at a p-value of <0.05.

Discussion

This study assessed HIV Clients’ Satisfaction Questionnaire with Home Delivery of Antiretroviral in Abuja, Nigeria. The clients were perceived to have received a good knowledge about their health condition during refill. They find the delivery model highly convenient and very confidential. The general satisfaction was seen to be very high this is also seen in the study done by Smith et al.

Conclusion

The client living with HIV in Abuja Nigeria that engaged in receiving their medication through the Home delivery of Anti-retroviral received a good health education during refill. Generally, the clients find this system of refill very confidential and convenient for them.

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Availability of data material

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

Author's Contributions

Author's Contributions AN, NS, and EIO conceived of the study. EIO, OO, and AN design the study instrument AN, NS, and OI initiated the study design. ANI distributed and collated the data, OKO, AN, and OEK analyzed the data. All authors contributed to the refinement of the study protocol and approved the final manuscript.

Limitations of this study

The study is conducted only in one state in Nigeria and thus this may not allow for the generalization of the study findings.

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Author's information

Author's information AN is a Ph.D. student in Nnamdi Azikiwe University, Awka, Nigeria. She is also a lecturer in the Department of Clinical Pharmacy and Biopharmaceutics. Enugu State University of Science and Technology, Enugu. OO is a Lecturer in the Department of Clinical Pharmacy and Biopharmaceutics, Enugu State University of Science and Technology, Enugu. OEK is a Lecturer in the Department of Clinical Pharmacy and Biopharmaceutics, Enugu State University of Science and Technology, Enugu. ANI is a Lecturer in the Department of Pharmacology and Toxicology, Enugu State University of Science and Technology, Enugu. OK is a Lecturer in the Department of Pharmacology and Toxicology, Enugu State University of Science and Technology, Enugu. NS is a senior lecturer in the Department of Clinical Pharmacy and Pharmacy Management, Nnamdi Azikiwe University, Awka, Nigeria. EIO is an Associate Professor at Nnamdi Azikiwe University, Awka, Nigeria

Ethics approval

The research was approved by the hospital management. Informed consent was obtained from those that agreed to participate in the study. Participants' data were kept confidential by assigning codes instead of using names.

Consent for publication

Not Applicable.

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