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KNOWLEDGE, EFFECTIVENESS, ADVERSE EFFECTS AND OTHER CORRELATES OF PAIN KILLERS AMONG RESIDENCE OF YENAGOA, COUNCIL AREA OF BAYELSA STATE, SOUTH- SOUTH OF NIGERIA

***Owonaro P. A., Eniojukan J. F., Ganiyu K. A. and Owonaro Awala Daughter E.**

Public Health Pharmacy Unit, Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa State. And skypat pharmacy limited Yeanagoa.

***Corresponding Author: Owonaro P. A.**
Public Health Pharmacy Unit, Department of Clinical Pharmacy and Pharmacy Practice, Faculty of Pharmacy, Niger Delta University, Wilberforce Island, Bayelsa State. And skypat pharmacy limited Yeanagoa.

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ABSTRACT
NSAIDs use is fraught with a lot of challenges mostly with developing countries. They have anti-inflammatory, antipyretic and analgesic effects. This study evaluated knowledge of rational use of NSAIDs, self-reported effectiveness and side-effects during pain management, and health seeking behavior among residence of Yenagoa Council Area of Bayelsa State. Over one thousand questionnaires were administered to willing respondents; SPSS version 20 was used to analyze data obtained. Male respondents were 56.9%; 45.9% were single; 36% were married; 46% were within the age group of 18-30 years and 35.3% were within the age group of 31-45 years. About 79.9% of respondents earned 100,000-500,000 naira annually and majority were artisans and civil servants; 89.9% were Christians. On the use of NSAIDs, 68. 4%, 68% and 75.1% had a very good knowledge of correct dose, duration of use, and frequency of use respectively; 39.8% had a good knowledge of side effect of pain relievers they were taking. On effectiveness, 77.2% reported Diclofenac K (Cataflam) to be effective, 34% and 59.4% respectively reported Diclofenac Na (voltaren) to be very effective and effective while 58.6% reported that Clecoxib (Celebrex) was effective. On side-effects, 31.6% and 72.8% respectively always and sometimes experienced heart burn while 4.7% and 59.7% experienced stomach pain always and sometimes respectively; 12.5% and 80.5% of respondents experienced chest pain always and sometimes respectively. Regarding health-seeking behaviour, 22.3% and 46.8% of respondents respectively always and sometimes visited the Hospital when they had pains; 44.2%, 62.4%, 39% and 35.5% respectively sometimes visited the Herbal clinic, massaging homes, church/mosque and the pharmacy; 15.9% always visited the pharmacy; 34% and 49% respectively always and sometimes visited the doctor while 37.4% sometimes visited the nurses. On the other hand, 56% always visited their Pharmacists. Marital status, Age and Education were correlated with knowledge of pain reliever; Gender, Occupation and Annual income were not. There is need to enhance the Rational Use of NSAIDs in this community to avert impending adverse consequences.

INTRODUCTION
Non-steroidal anti-inflammatory drugs (NSAIDs) are well known with a daily intake by about 30 million people. They are easily accessible as over-the-counter (OTC) formulations as well as in prescription form. They have anti-inflammatory, antipyretic and analgesic effects. However, they have some set back such as gastrointestinal (GI) tract irritation, renal impairment, and cardiovascular complications. These effects are less pronounced compared with non-NSAIDs users. Other common sides effects include raised liver enzymes (detected by a blood test), diarrhoea, headache, dizziness, salt and fluid retention. Less common side effects are ulcers of the oesophagus, rectal irritation (if suppositories are used), heart failure, mostly with ACE inhibitor, hyperkalaemia, reduced kidney function especially when used with ACE Inhibitor, confusion, bronchospasm (causes difficulty breathing), skin rash, skin irritation, reddening, itching or rash (if skin products are used, such as a cream), increased bleeding with antiguagulants, impaired bone healing and tendon to bone healing [Owonaro and Eniojukan 2016; Bailey Su, and Patrick, 2013; Wahinuddin et al., 2012; Manda et al., 2009 and Jeremy,2006][25, 4, 29,21 and16].

NSAIDs remain the main stay for pain management with attendant side-effects as earlier –mentioned. The best way to reduce side effects is to lower the dose, administer them with other GIT protective agents or use them only occasionally. Most of the users of NSAIDs do not know the side effects of NSAIDs. Therefore, health professionals are obliged to educate their patients [Onigbinde et al., 2014; Jeremy, 2006][24,16]. NSAIDs are considered to be relatively safe. This is dependent on

how rationally they are used and adherence to prescription in conjunction with adequate patient knowledge [Whitten, et al 2005][33].

Patient knowledge of pain killer use, pattern and reasons for its used is critical to patient safety. These cannot be guaranteed by the information conveyed in drug leaflets. The above should be delivered to the patients effortlessly during patient-practitioner interactions. A readable and correct prescription does not guarantee appropriate use by the patient. Failure to educate patients on rational use of drug by the Pharmacist and other Health care professionals will result in non-adherence and irrational use. [Wahinuddin et al., 2012, Azodo and Umoh 2013][32, 3].

Several studies have reported that NSAIDs are effective pain killer. However, other findings also showed that their effectiveness varies. This implies that some pain killers are more effective than others as stated by American National Safety Council [Donald, 2015]

As a result of the myriad of challenges associated with NSAIDs use, mostly with developing countries, we evaluated the knowledge of rational use of NSAIDs, effectiveness in pain management, effects of pain killers to patients and the health seeking behavior with NSAIDs among residents of Yenagoa Council Area of Bayelsa State in Nigeria.

METHOD

Study population

This study was carried out in Yenagoa council area of Bayelsa State, South- South region of Nigeria with a population of 266,008 at the 2006 census [Wikipedia 2009][34].

Study Design and Sample

A total of 1,400 questionnaires were given out only of 1, 311 respondents agreed to participate after they were made to understand the full objectives of the study. The sample size was calculated using the formula for evaluating the sample size population[2]. The questionnaire captured demographic data, knowledge of rational use of NSAIDs, effectiveness in pain management, side-effects experienced and the health seeking behavior with NSAIDs.

Data Analysis

SPSS version 20 was utilized for data analysis. A t-test was also conducted using one way ANOVA.

RESULTS

Demography

About 1, 400 questionnaires were given out; 1, 311was retrieved from the respondents giving a response rate of 93.6%. Of the total respondents, 56.9% were males; 45.9% were single, 36% were married; 46% fell within the age groups of 18-30 years and 35.3% were within the age group of 31-45 years. About 66.6% of the respondents had secondary education; 39.6% were Artisan while 31.7% were Civil servants. About 79.9% of respondents earned 100,000-500,000 naira as annual income; 89.9% were Christians. See Table 1 for details

Table1: Socio-demography of respondents

	Freq.	Percent
Gender		
Male	746	56.9
Female	565	43.1
Marital status		
Single	594	45.3
Married	472	36.0
Widowed	80	6.1
Divorced	61	4.7
No response	104	7.9
Age group (yrs)		
18-30	603	46.0
31-45	463	35.3
46-60	190	14.5
Over 60	34	2.6
No response	21	1.6
Education		
Primary	137	10.5
Secondary	873	66.6
Tertiary	151	11.5
None	67	5.1
Occupation		
Artisan	519	39.6
Civil servant	415	31.7
Retiree	80	6.1
Trader/business	174	13.3
No response	123	9.4
Annual income (Naira)		
100,000-500,000	1048	79.9
1-2 Million	26	2.0
>2 Million	13	1.0
No response	58	4.4
Religion		
Christianity	1178	89.9
Islam	26	2.0
Traditional	66	5.0
Others	4	0.3
No response	37	2.8

Knowledge of administration of Pain killers

Regarding knowledge of administration of pain killer, 68. 4% had a very good knowledge of correct dose, 68% had a very good knowledge of how long it should be taken, 75.1% had a very good knowledge of how frequent it should be taken; 39.1% had no idea if it can be taken along with alcohol, 39.6% had no idea if it should be taken along with food; 63.6% also had no idea

if it could be taken on empty stomach and 78.9% had no idea if it could be taken along with antacid. See Table 2

Table 2: Knowledge of administration of Pain killers

Variable	Very good N (%)	Average N (%)	Not at all N (%)
Correct dose to take	897(68.4)	254(19.4)	131(10.0)
How long it should be taken	891(68.0)	318(24.3)	61(4.7)
How frequent you should take it	984(75.1)	79(6.0)	204(15.6)
Whether it can be taken along with alcohol	385(29.4)	311(23.9)	512(39.1)
Whether it can be taken along with food	173(13.2)	582(44.4)	519(39.6)
Whether it can be taken on empty stomach	106(8.1)	271(20.7)	834(63.6)
Whether it can be taken with Antacids	21(1.6)	73(5.6)	1034(78.9)

Knowledge of adverse effects of pain killers

Regarding respondent knowledge of side effects 39.8% had a good knowledge, 33.6% had a very good knowledge, 13.8% had excellent knowledge, 3.5% had poor knowledge and 8.9% had no knowledge of side effect of Pain relievers. See Fig 1

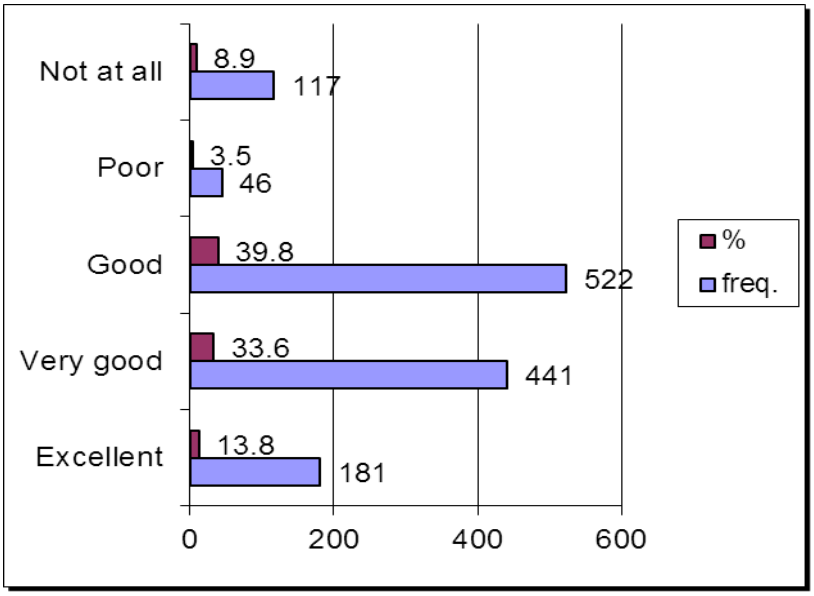

Fig.1. Respondents' rating of knowledge of Side-Effects of pain relievers

Self-reported effectiveness of pain relievers used

Regarding effectiveness of pain relievers, 77.2% reported Diclofenac K (Cataflam) was effective; 34% and 59.4% respectively reported that Diclofenac Na (voltaren) was very effective and effective; 58.6% reported that Celecoxib (Celebrex) was effective. Further, the following drugs were rated as Very Effective: Ibuprofen (81%) Indomethacin (58.8%), Magnesium salicylate (76.5%), Mefenamic acid (64.7%), Aspirin (87.8%), Naproxen (89.1%), Sulindac (86.2%), Diclofenac/Misoprostol (90.4%), Acetaminophen (90%), and Arthrocare (85.8%). The following drugs were rated as Effective: ketoprofen (60.5%), meloxicam (64.8%), piroxicam (53.2%) , flurbiprofen (62.9%), Diflunisal (73.9%), chloroquine (50.3%), Allopurinol (73.7%). See Table 3 for details.

Table 3: Self-reported effectiveness of pain relievers used

Variable	Very effective N (%)	Effective N (%)	Not effective N (%)	Total N (%)
Diclofenac K (Cataflam)	282(22.8)	953(77.2)	21(1.7)	1235(94.2)
Diclofenac Na (Voltaren tab)	492(34.0)	732(59.4)	8(0.6)	1232(94.0)
Celecoxib (Celebrex)	337(40.8)	484(58.6)	5(0.6)	826(63.0)
Ibuprofen	928(81.0)	218(19.0)	0(0.0)	1146(87.4)
Indomethacin	301(58.8)	172(33.6)	39(7.6)	512(39.1)
Ketoprofen	218(37.6)	351(60.5)	11(1.9)	580(44.2)
Magnesium salicylate	39(76.5)	12(23.5)	0(0.0)	51(3.9)
Mefanemic acid	538(64.7)	294(35.3))	0(0.0)	832(63.5)

Meloxicam	287(35.2)	529(64.8)	0(0.0)	816(62.2)
Aspirin	738(87.8)	97(11.5)	6(0.7)	841(64.1)
Naproxen	621(89.1)	66(9.5)	10(1.4)	697(53.2)
Piroxicam	399(44.7)	455(53.2)	1(0.1)	855(64.2)
Flurbiprofen	31(32.0)	61(62.9)	5(5.1)	97(7.4)
Sulindac	75(86.2)	5(5.7)	7(8.0)	87(6.6)
Diclofenac sodium with misoprostol	698(90.4)	74(12.2)	0(0.0)	772(58.9)
Diflunisal	18(26.1)	51(73.9)	0(0.0)	69(5.3)
Chloroquin	20(11.4)	88(50.3)	67(38.3)	175(13.3)
Allopurinal	87(21.6)	297(73.7)	19(4.7)	403(30.7)
Acetaminophen	1087(90.0)	118(9.8)	3(0.2)	1208(92.1)
Athrogratis	21(72.4)	8(27.6)	0(0.0)	29(2.2)
Arthocare	621(85.8)	88(12.2)	15(2.1)	724(55.2)
Arthocare plus	723(88.1)	92(11.2)	6(0.7)	821(62.6)

Side effects experienced with pain reliever (NSAIDs)

Of the total respondents, 31.6% always experienced heart burn while, 72.8% sometimes experienced heart burn; 4.7% and 59.7% experienced stomach pain always and sometimes respectively; 12.5% and 80.5% experienced chest pain always and sometimes respectively.

Less than 10% of respondents reported that they always or sometimes experienced blood in urine, blood in stool, body swelling and sweating; 99.1%, 90.8%, 99.3% and 96.3% respectively never experienced blood in urine, blood in stool, body swelling, and sweating with Pain relievers. See Table 4 for details

Table 4: Side effect experienced with pain reliever (NSAIDs)

How often do you experience the following side effects after taking pain killers?			
	Always (%)	Sometimes (%)	Never (%)
Heart burns	411(31.6)	954(72.8)	543(41.4)
Stomach pains	61(4.7)	783(59.7)	467(35.6)
Chest pains	164(12.5)	1056(80.5)	91(12.5)
Blood in urine	3(2.2)	9(6.7)	1299(99.1)
Blood in stool	29(2.2)	92(7.0)	1190(90.8)
Body swelling	2(0.2)	7(0.5)	1302(99.3)
Sweating	10(0.8)	39(3.0)	1262(96.3)

Health seeking behavior with pain

Among the respondents, 22.3% always visited the Hospital when they had pains; 46.8% sometimes visited the Hospital when they had pains; other places always visited were Pharmacy (15.9%), Chemist shops (11.7%), Street vendors (10.5%). Occassional (sometimes) visits were made to Herbal clinics (44.2%), massaging homes (62.4%), Churches/Mosques (39%), Pharmacy (35.5%), Chemist shops (44.8%), and Street vendors (38.1%). See Table 5

Table5: Respondents health-seeking behavior with pain

Variable	**Always N(%)**	**Sometimes N(%)**	**Never N(%)**
What do you do when you have pain?			
Go to the hospital	299(22.3)	613(46.8)	395(30.1)
go to herbal clinic	180(13.7)	579(44.2)	527(40.2)
go to massing homes	173(13.2)	818(62.4)	292(22.3)
go to church/mosque	174(13.3)	511(39.0)	613(46.8)
go to pharmacy	209(15.9)	466(35.5)	636(48.5)
go to chemists	153(11.7)	587(44.8)	550(42.0)
visit street vendors	137(10.5)	499(38.1)	654(49.9)

Response to side effects

Of the total respondents, 34% and 49% respectively always and sometimes visited the doctor; 37.4% visited their nurse sometimes, 56% visited their Pharmacist always, while 27.8% sometimes visited their Pharmacist. 66.1% never visited their family for solution to side effect, 20.1% sometimes visited their friends; 52.5% visited chemist shops and 56.8% never visited herbal clinic for remedy to side effects. See Table 6

Table 6: Response to side effects

Visit your doctor	Always (%) 446(34.0)	Sometimes (%) 643(49.0)	Never (%) 86(6.6)
Visit your nurse	87(6.6)	490(37.4)	106(8.1)
Visit your pharmacist	734(56.0)	365(27.8)	11(0.8)
Visit family	41(3.1)	85(6.5)	867(66.1)
Visit friend	67(5.1)	264(20.1)	221(16.9)
Visit chemist shop	386(29.4)	688(52.5)	87(6.6)
Visit herbal clinic	47(3.6)	75(5.7)	745(56.8)

Cross tabulation of Respondents pain reliever knowledge with demography

Respondents' pain reliever knowledge was correlated with marital status, Age group and educational status ($p<0.05$) while gender, occupation and annual income had no correlation ($p>0.05$). See Table 7

Table 7: Cross tabulation of Respondents Pain Reliever Knowledge with Demography

Variable	Pain reliever knowledge		Total	p-value
	Poor (%)	Good (%)		
Gender				
Male	231 (31.0)	515 (69.0)	746 (56.9)	
Female	112 (19.8)	453 (80.2)	565 (43.1)	0.045
Marital status				
Single	82 (13.8)	512 (86.2)	594 (45.3)	
Married	21 (4.4)	451 (95.6)	472 (36.0)	0.025
Widowed	13 (16.3)	67 (83.8)	80 (6.1)	
Divorced	18 (29.5)	43 (70.5)	61 (4.7)	
Age group (yrs)				
18-30	145 (24.0)	458 (76.0)	603 (46.0)	
31-45	87 (18.8)	376 (81.2)	463 (35.3)	0.039
46-60	25 (13.2)	165 (86.8)	190 (14.5)	
Over 60	11 (32.4	23 (67.6)	34 (2.6)	
Education				
None	48 (71.6)	19 (28.4)	67 (5.1)	
Primary	62 (45.3)	75 (54.7)	137 (10.5)	0.000
Secondary	321 (36.8)	552 (63.2)	873 (66.6)	
Tertiary	33 (21.9)	118 (78.1)	151 (11.5)	
Occupation				
Artisan	285 (54.9)	234 (45.1)	519 (39.6)	0.059
Civil servant	252 (60.7)	163 (39.3)	415 (31.7)	
Retiree	47 (58.8)	33 (41.3)	80 (6.1)	
Trader/business	110 (63.2)	64 (36.8)	174 (13.3)	
Annual income				
100,000-500,000	512 (48.9)	536 (51.1)	1048 (79.9)	0.063
500,000-1M	65 (39.2)	101 (60.8)	166 (12.7)	
1M-2M	18 (69.2)	8 (30.8)	26 (2.0)	
>2M	6 (46.2)	7 (53.8)	13 (1.0)	

Cross Tabulation of Respondents' Health-seeking behavior with demography:

Regaring respondent health seeking behavior with demography, there was a statistically significant correlation between gender, marital status, Age group, Education, occupation and annual income ($p<0.05$). See Table 8

Table 8: Cross Tabulation of Respondents' Health-seeking behavior with demography

Variable	Health seeking behavior		Total	p-value
	Negative(%)	Positive (%)		
Gender				0.027
Male	418(56.0)	328(44.0)	746 (56.9)	
Female	193(34.2)	372(65.8)	565 (43.1)	

Marital status				
Single	281(47.3)	313(52.7)	594 (45.3)	0.032
Married	119(25.2)	353(74.8)	472 (36.0)	
Widowed	49(61.3)	39(48.8)	80 (6.1)	
Divorced	11(18.0)	50(82)	61 (4.7)	
Age group (yrs)				
18-30	139(23.1)	464(76.9)	603 (46.0)	0.013
31-45	68(14.7)	395(85.3)	463 (35.3)	
46-60	48(25.3)	142(74.7)	190 (14.5)	
Over 60	11(32.4)	23(67.6)	34 (2.6)	
Education				
None	45(67.2)	22(32.8)	67 (5.1)	0.019
Primary	36(26.3)	101(73.7)	137 (10.5)	
Secondary	48(5.4)	825(94.5)	873 (66.6)	
Tertiary	17(11.3)	134(88.7)	151 (11.5)	
Occupation				
Artisan	245(47.2)	274(52.8)	519 (39.6)	0.033
Civil servant	236(56.9)	179(43.1)	415 (31.7)	
Retiree	47(58.8)	(41.3)	80 (6.1)	
Trader/business	72(41.3)	10258.6)	174 (13.3)	
Annual income				
100,000-500,000	375(35.8)	673(64.2)	1048 (79.9)	0.025
500,000-1M	33(19.9)	133(80.1)	166 (12.7)	
1M-2M	4(15.4)	22(84.6)	26 (2.0)	
>2M	8(61.5)	5(38.5)	13 (1.0)	

Cross tabulation of Respondents Attitude towards side effects with demography:

Regarding respondent attitudes towards side effect with demography, there was a correlation or statistical significant between gender, marital status, Age group, Education, occupation and annual income ($p<0.05$). See Table 9

Table 9: Cross tabulation of Respondent Attitude towards side effects with demography

Variable	Attitude towards side effects		Total	p-value
	Negative (%)	Positive (%)		
Gender				
Male	121(18.8)	524(81.2)	645 (56.9)	0.018
Female	89(15.7)	476(84.2)	565 (43.1)	
Marital status				
Single	39(6.6)	555(93.4)	594 (45.3)	0.012
Married	98(20.8)	374(79.2)	472 (36.0)	
Widowed	12(15.0)	68(85.0)	80 (6.1)	
Divorced	8(13.1)	53(86.9)	61 (4.7)	
Age group (yrs)				
18-30	193(32.0)	410(68.0)	603 (46.0)	0.038
31-45	64(13.8)	399(86.2)	463 (35.3)	
46-60	23(12.1)	167(87.9)	190 (14.5)	
Over 60	9(26.5)	25(73.5)	34 (2.6)	
Education				
None	6(9.0)	61(95.3)	67 (5.1)	0.025
Primary	27(19.7)	110(80.3)	137 (10.5)	
Secondary	39(4.5)	834(95.5)	873 (66.6)	
Tertiary	22(14.6)	129(85.4)	151 (11.5)	
Occupation				
Artisan	97(18.7)	422(81.3)	519 (39.6)	0.016
Civil servant	68(347)	347(83.6)	415 (31.7)	
Retiree	17(21.3)	63(78.8)	80 (6.1)	
Trader/business	22(12.6)	152(87.4)	174 (13.3)	
Annual income				

100,000-500,000	211(20.1)	837(79.9)	1048 (79.9)	0.024
500,000-1M	3(1.8)	163(98.2)	166 (12.7)	
1M-2M	11(42.3)	15(57.7)	26 (2.0)	
>2M	9(69.2)	4(30.8)	13 (1.0)	

DISCUSSION

Demography

The study revealed that more males participated. Majority were single /married within the age group of 18-30 years with secondary education. The respondents were artisans and more of civil servants. This is expected since Yenagoa council area is the state Capital, residents are more into white collar jobs. Majority of the respondent's annual income fell within 100,000-500,000. They were mostly worshippers of the Christian faith.

Knowledge of administration of Pain killers

More than half (68.4%) of respondents showed a very good knowledge of the correct dose of the pain killer prescribed for them. Also a high percentage of the respondents reported a very good knowledge of how long it should be taken and frequency of administration of their pain killer. However, few of the respondents had a poor or no knowledge of how to take their pain relievers in terms of duration, frequency, with food, alcohol, on empty stomach, and with antacid. This is a serious concern as therapeutic failure is inevitable and will expose the user to adverse drug reactions that may have negative implications.

NSAIDs ordinarily should be administered with food or after meal. Regarding alcohol patients are advised not to take it with alcohol due to drug-alcohol interactions and it effect on the liver. On disease state the like ulcer, cardiovascular diseases, kidney impairment other disease states induced by NSAIDs doses are reduced or avoided and other pain relievers are recommended or prescribed [Thomas and Ahsan, 2001; Ron and David, 1999].[31,26]

A major contributory factor is the non-availability of proper drug information and counseling at the points of sale of such medications. In Yenagoa council area, there are community pharmacy premises and patient medicine (chemist) shops. But most time the professionals do not attend to the patients and some patient will not see or feel the relevance/importance of drug information service but rather hold to their old beliefs. Secondly, proper pharmaceutical care would have been provided but this is not available in chemist shops who are in strong competition with the pharmacies but are manned by non-professionals that are incapable of providing pharmaceutical care services. [Lanas et al., 2015][19]. In situations like this, the rational use of pain relievers can't be maximized. Hence it is eminent that due to the lack of rational use of pain killers in the city, there will be a high prevalence of pain killer- induced adverse drug reactions and a pre-disposition to therapy failures. Also, economic loss is certainly inevitable. This will eventually erode patient confidence in prescribers and dispensers over time if measures are not put in place to forestall this ugly trend. Other study has also reported irrational use of pain killers [Kassaw and Wabe, 2012][17]. There is an urgent need to intervene through appropriate public education and enlightenment programmes in order to avert the looming catastrophic adverse events. This should be seen as public health problem in the council area and the state at large.

Knowledge of adverse effects of pain killers

Regarding the knowledge of pain relievers, only a little over a tenth (13.8%) of respondents had excellent/very good knowledge of the side-effects of the pain relievers they took; 8.9% had no such knowledge at all. This low level of knowledge must have been responsible for the excessive adverse effects experienced by the users of NSAIDs [Chen et al., 2014; Matoulková et al, 2013][7, 22]. This shows that there are no adequate interactions between the patients and the health care professionals at the points of prescription, sales or dispensing. Also the high literacy level of the patients were not well utilised. [Devraj et al., 2013][11].

Prior knowledge of Adverse effects of drugs is important to patients not to abuse NSAIDs. This will enhanced rational use of NSAIDs with full enforcement and implementation of compliance/adherence by the patients.

Other studies have however reported that patients were given adequate health information by health care professionals on NSAIDs use [Sulaiman et al., 2012][28].

Self-reported effectiveness of pain relievers

Majority of the respondents lauded high effectiveness of ibuprofen, indomethacin, mefenamic acid, magnesium salicylate, aspirin, naproxen, allopurinol and acetaminophen, Arthrogratis, Arthrocare, Sulindac and ,Diclofenac sodium with mistoprotol, as pain relievers.

Also, all users of Diclofenac K (Cataflam), Celecoxib, ketoprofen, meloxicam, piroxicam, flurbiprofen, Diflunisal chloroquine and Allopurinol found it effective. These are self-reported outcomes of use of pain-killers and therefore, very subjective. The effectiveness of NSAIDs to relieve pain is not in doubt. The effectiveness of pain killers can be linked to right and accurate diagnosis, appropriate dispensing with the right drug information to the patient. Other studies have reported an excellent effectiveness of NSAIDs in pain management mostly for psychogenic pains [Ong et al., 2007; Fine, 2013][23,13]. For short term pain relief (less than 6 months), all NSAIDs have a similar effect on reducing pain in adults with chronic pain from either osteoarthritis, rheumatoid arthritis, soft-tissue pain, back pain, or ankylosing spondylitis. [Dean, 2011][10].

All NSAIDs ease the pain and other symptoms of osteoarthritis and other types of pain, too. At equivalent doses, their effectiveness is essentially the same. No study, to date, shows that one NSAID is superior to others in relieving pain. The overall effectiveness in relieving pain obviously endeared NSAIDs to the largely artisan and civil servant respondents for the management of assorted pains they experience on a daily basis. Caution and drug information is critically needed here to ensure their rational use without adverse consequences.

Significant outcomes from this study are the reasons proffered by the respondents for the non-effectiveness of pain killers. Few of the respondents that reported non-effectiveness of pain relievers opined that they were either exposed to adulterated, expired drugs or was due to poor compliance. These situations can definitely result to loss of therapeutic effectiveness. Some of the procurement sources of medicines in the council area cannot guarantee high quality medicines, good storage conditions to sustain the expected life-span of medicines and provision of optimal drug information to assure rational use. On the other hand, certain conditions may require drug combinations to achieve an effective therapeutic response [Laar et al., 2012][18]. Otherwise, consumers may experience a false negative response.
It is therefore expedient for consumers to evaluate their sources of drugs.

Side effect experienced with pain reliever (NSAIDs)
The adverse effects experienced by respondents included heart burn, stomach pain, chest pain, blood in urine/stool, body swelling and sweating.

These ADRs are as a result of administration NSAIDS particularly the more prevalent GIT effects and it is similar to other reports [Taubert, 2008][29]. The effect of NSAIDs on the gastrointestinal tract has been established. COX- 1 which is found in most of the tissues helps in protecting the physiological integrity of the GIT. Therefore, the inhibition of COX- 1 impedes the gastric cytoprotective effect in the GIT resulting to hemorrhage, perforation and obstruction of the GIT [Ong et al., 2007; Taubert, 2008; Crofford, 2013][23,29, 9].

NSAIDs use can increase the risk for stomach bleeding. It has been reported that more than 100,000 Americans are hospitalized each year and more than 16,000 die from ulcers and gastrointestinal bleeding due to NSAID use, according to The Arthritis, Rheumatism and Aging Medical Information System. people who have previously had stomach bleeding and/or ulcers are at higher risk. Other risk factors include older age and taking other NSAIDs, corticosteroids, or blood thinners—for example, clopidogrel or warfarin. [BBD 2013][5].

Other NSAIDs-induced adverse effects include cardiovascular, renal and hepatic dysfunctions. The available evidence indicates that other than aspirin and naproxen, NSAIDs in general are associated with an increased risk of heart attacks or strokes [Bhala *et al, 2013*][6]. NSAIDs have been associated with kidney failure, so people with kidney disease due to diabetes or other causes ideally should not take NSAIDs [BBD 2013;Lee et al, 2007][5, 20].

These complex ADRs require professional knowledge and skills to detect, manage and prevent. Thus, it is not impossible the ADRs were under-reported in this study and does not signify their non-existence. Furthermore, even though NSAIDs likely differ in the risks they pose to the stomach or heart, there is no NSAID that carries both a low risk of bleeding as well as low heart attack or stroke risk; the safety profile of the NSAID and the individual's risk profile are the two factors that inform on the choice and dose of a particular NSAID [BBD 2013][5]. These are indices that lay-people like those in this study cannot pre-determine. Therefore, people in this Yenagoa council area can be said to be potentially at high risk of developing severe ADRs.

Health seeking behavior with pain and side effect experienced
This is a response taken by an individual to solve his or her medical problem [Ige and Nwachukwu 2008][14]. Most of the respondents reported that they sometimes visited health facilities and health professionals whenever they had pains or experienced side-effects sequel to the use of pain killers. A lesser number of the respondents always visited the Health facilities/professionals. The few respondents that always visited health facilities/professionals may be associated with ready availability of health facilities/personnel. This shows that the people have a proper health-seeking behavior. Though, the proportion of the population with this good health seeking behavior is low, it should be encouraged via public enlightenment programmes. A patient always visiting health professionals for medical problem is a right attitude and practice and should be encouraged. The availability of health facilities and health personnel must have influenced the few that visit the Health facility. Only few of the respondents visited friends and family for medical help, while over 50% visited herbal clinic for remedy. This should be out rightly discouraged, via stakeholder's intervention. A study carried out in North Central of Nigeria reported that patients preferred seeking for medical help in private facilities rather than government hospitals [Akande and Owoyemi, 2009][1]. This is more pronounced in developing countries like Nigeria, where patients source for alternative measures to solve their medical problem. This is a direct consequence of poor public health care facilities and professionals [Iyalomhe and Iyalomhe 2012][15]. This study revealed that just 22.3% of respondents visited the hospital when they had pain or experienced side effects. This is the best practice and patients and the public should be encouraged to do likewise. This study reported that 62.4% and 39% sometimes went to the massaging homes and

church/mosque respectively to seek for medical attention and advice. 11.7% and 44.8% always or sometimes visited the chemist, while 10.5% and 38.1% always and sometimes visited street vendors. The main problem associated with these alternative resource centers is that clients will never receive appropriate medical or pharmaceutical care. This should be discouraged and a campaign on good health seeking behavior should be encouraged.

CORRELATIONS

Marital status, Age and Education had statistically significant correlation with the knowledge of pain relievers while Gender, Occupation and Annual income had no correlation with Knowledge of pain relievers. This implied that what the respondents did for a living and how much income they earned had no bearing to the knowledge they had concerning pain killers.

On the other hand, Gender, Marital Status, Age, Education, Occupation and Annual income were all statistically correlated with the health seeking behaviour and Attitude towards side-effects of the respondents. This implied that all demographic indices had a bearing on behaviour and attitude of the respondents.

CONCLUSION

The study revealed that more males participated. Mostly single and married within the age group of 18-30 years with secondary education. Majority of the respondent earned 100,000-500,000 naira annually. They were mostly worshippers of the Christian faith; majority showed a very good knowledge of the correct dose of pain killer; 13.8% had excellent/very good knowledge of the side-effects of the pain relievers they took; 8.9% had no such knowledge at all. Side-effects experienced included heart burn, stomach pain, chest pain, blood in urine/stool, body swelling and sweating.

Most of the respondents reported that they sometimes visited health facilities, health professionals, whenever they had pains or experienced side-effects. Only few of the respondents visited friends and family for medical help, while over half visited herbal clinic for remedy. Gender, Marital Status, Age, Education, Occupation and Annual income were all statistically correlated with the health seeking behaviour and Attitude towards side-effects of the respondents.

The study revealed that residents of this community may be at high risk of developing significant adverse reactions to NSAIDs. Therefore, strategic public enlightenment and screening programmes should be embarked upon to avert the looming catastrophe. A study on the incidence or prevalence of peptic ulcer disease and other linked complications may be needed to unveil the extent of the ADRs associated with NSAID use in this community.

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