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Original Research Article

Prevalence, Patterns and other Contextual Correlates of Self-medication with Pain Relievers in Opokuma Community in Bayelsa State, Nigeria

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Abstract: The prevalence of use of analgesics is high. The main stay of treatment of pains is the Non-steroidal Anti-inflammatory Drugs (NSAIDs). The aim of this study was to evaluate the prevalence and pattern of use of NSAIDs. 254 questionnaires were administered randomly to respondents that consented after carefully explaining the objective of the study. There were more females (61%); 89.4% were aged 18-45 years; 61% had secondary education; 56.3% were artisans of various trades; 96.5% were Christians. Majority (76.8%) had annual incomes of Naira100, 000-500,000. All respondents had ever taken pain relievers; Ibuprofen was used most frequently (49.2%), followed by diclofenac potassium (46.5%) and acetaminophen (41.7%).Respondents sometimes used pain relievers to manage headache (79.5%), general body pains (72.4%);body weakness (64.6%), stomach pains (63%); 71.7% ever indulged in multi-drug therapies involving more than one pain killer. Half the respondents preferred their choice of pain killer based on effectiveness; 99.2% and 90.2% respectively followed the instructions of the chemist and health professionals. Respondents reported that high cost of pain killers (72.8%), out-of-stock syndrome for preferred brands (58.0%), none-effectiveness (57.6%) and the distance to procure the medication (54.3%) sometimes stood as barriers to access to pain killers;61% spent N 501-2000 monthly on pain killers. Education and marital status were correlated with pattern of use; gender, age, marital and educational status were all correlated with use of combination pain killers. There is urgent need to educate the people in this community on the rational use of pain drugs.
Keywords: Pain killers, NSAIDs, Community, Prevalence, Patterns, Nigeria.

INTRODUCTION

Non- steroidal anti-inflammatory drugs (NSAIDs) are a group of heterogeneous compounds that exhibits properties such as anti- inflammatory, analgesic and antipyretic. They are organic acids and are used in orthopaedic and trauma cases. They are the most commonly abused drug with life threatening complications. The abuse of NSAIDs is as a result of poor prescribing habits of the health care professional [1].

Inflammation is a non- specific reaction from noxious stimuli from toxins and pathogens with the effort of the body at inactivating them and setting the stage for tissue repairs. Some of the features of inflammatory response are redness, swelling, pain and heat which are localized at the site of infection. It is a non-specific immunological reaction. Cell mediators such as leukocytes and their cytokines are released which mediate the inflammatory processes. These processes are triggered by the release of chemical mediators from injured tissues and migrating cells. The specific chemical mediators include amines e.g. histamine and 5-hydroxytryptamine, lipids e.g. prostaglandins.

The main stay of treatment of pains is the Non-steroidal Anti-inflammatory Drugs (NSAIDs). They are the most widely prescribed in the management of pain such as dental pain, post-surgery induced pain and other forms of acute and chronic pains. The use of NSAIDs has led to about 100,000 hospitalized cases due to the adverse effect of NSAIDs [2].

NSAIDs are used in the treatment of rheumatoid arthritis, sports injuries, fractures, sprains, acute arthritic pains and other soft tissue injuries; relieve post-operative pain, dental, menstrual pain, headaches and migraine. NSAIDs can also be given to neonates whose ductus arteriosus did not close within 24 hours of birth [3].

The adverse effect of NSAIDs, mostly the cyclooxygenase (COX)-2 inhibitors, in cardiovascular disease is well known. They increase the risk of myocardial infarction, blood pressure and stroke [4, 5].

Other side effects of NSAIDs are renal disorders, ulceration of the gastrointestinal tract (GIT), GIT bleeding, hepatic disorders, heart burn, chest pain and stomach pain. This study aimed at evaluating the prevalence, pattern and other contextual issues with the use of NSAIDs in Opokuma Bayelsa State.

METHOD

Study population

This study was carried out in Opokuma clan which is a community in Kolokuma/Opokuma Local Government Area of Bayelsa state, South- South region of Nigeria. The community has a population of about 10,000.

Study Design and Sample

254 questionnaires were administered randomly to respondents that consented after carefully explaining the objectives of the study. The sample size was calculated using the formula for evaluating the sample size population [6]. The questionnaire was designed to capture demographic data, prevalence and patterns of pain management.

Data Analysis

Data from the questionnaires were entered and analyzed using SPSS version 20 spread sheet for descriptive and inferential statistics. A t-test was also conducted using one way ANOVA

RESULTS

Demography

Majority (61%) of respondents were females, mostly within the age of 18-45 years (89.4%), and had secondary education (61%); 56.3% were artisans of various trades; 43.7% were workers and 96.5% were Christians. Majority (76.8%) of the respondents had annual incomes of Naira100, 000-500,000. See table 1 for details.

Table 1: Demographic profile

Variable	Frequency	Percent
Gender		
Male	99	39.0
Female	155	61.0
Age (years)		
18-30	114	44.9
31-45	113	44.5
46-60	23	9.1
Above 60	4	1.5
Marital status		
Single	113	44.5
Married	126	49.6
Widowed	5	2.0
Divorced	10	3.9
Education		
Primary	41	16.1
Secondary	155	61.0
Tertiary	28	11.0
None	30	11.8
Occupation		
Carpenter	9	3.5
Farmer	69	27.2
Retiree	4	1.6
Brick layer	6	2.4
Iron bender	4	1.6
Drivers	51	20.1
Worker	111	43.7
Annual income		
100000-500000	195	76.8
500k-1m	41	16.1
1-2m	10	3.9
Above 2m	8	3.2
Place of residence		
City	137	53.9
Village	117	46.1
Religion		
Christianity	245	96.4
Islam	4	1.6
Traditional	5	2.0

Prevalence and patterns of pain management

All (100%) the respondents had taken pain reliever one time or the other. The rate of use of pain reliever was high (61%); ibuprofen (49.2%)was used most frequently, followed by diclofenac potassium(46.5%) and acetaminophen (41.7%). Chloroquine, diclofenac sodium, diclofenac+ misoprostol, piroxicam, mefenamic acid, aspirin, naproxen and indomethacin were used moderately among the respondents. See table 2 for details.

Table 2: Prevalence of Pain reliever use

Variable	Frequency	Percentage
Have you ever used pain relievers?		
Yes	154	100.0
Level of Pain reliever use		
Low	99	39.0
High	155	61.0
Pain relievers taken		
Diclofenac	118	46.5
Diclofenac Na	68	26.8
Celecoxib	17	6.7
Ibuprofen	125	49.2
Indomethacin	71	28.0
Ketoprofen	8	3.1
Magnesium salicylate	39	15.4
Mefenamic acid	69	27.2
Meloxicam	44	17.3
Aspirin	49	19.3
Naproxen	47	18.5
Naproxen sodium	27	10.6
Piroxicam	72	28.3
Flurbiprofen	30	11.8
Sulindac	22	8.7
Diclofenac Na + Misoprostol	85	33.5
Diflunisal	45	17.7
Chloroquine	93	36.6
Allupurinol	24	9.4
Acetaminophen	106	41.7
Arthrogratis	18	7.1
Arthocare	5	2.0
Arthocare plus	20	7.9

Cross tabulations

There was no statistical significance between males and females, likewise in age of respondents regarding patterns of use of pain relievers. However, a statistical significance was recorded in their education and marital status on the rate of use of pain relievers. See table 3 for details.

Indications for Pain Reliever

About 72.4% of respondents sometimes used pain relievers as a therapeutic option to manage general body pains;35.8% sometimes used the pain relievers for menstrual pains;79.5% of respondents sometimes used pain relievers for headache and 81.5% used pain relievers for malaria; 57.1%, 63%, 64.5%, 56.7% and 49.2% respectively, sometimes used pain relievers for chest pain, stomach pain, body weakness, joint pain and back pain; less than average number of the respondents always used pain relievers for the above reasons. See table 4 for details.

Choice and other correlates of use of pain relievers

About half (50.4%) of the respondents reported that their choice of pain relievers was based on their effectiveness; 28.3% reported that they took their medicines because they were prescribed by their health care providers; 9.1% because they were affordable. Regarding how they took their pain relievers, 99.2% and 90.2% respectively followed the instructions of the chemist and health professionals; 66.1%tooktheir pain relievers as instructed in the leaflets; Regarding the impact of previous prescriptions, 71.7% sometimes took their medications because they were once prescribed for them; 14.2% always made reference to earlier prescriptions for using their medications. Regarding multi-drug therapy, 71.7% took more than one pain reliever at a time; 55.4% took more than one pain reliever because they were prescribed for them. The various drug combinations used are listed in Table 5.

Table 3: Cross tabulation of level of pain reliever use and some demographics

Variable	Level of Pain reliever use		Total	p-value
	Low	High		
Gender				
Male	40	59	99	
	15.7%	23.2%	39.0%	
Female	59	96	155	0.709
	23.2%	37.8%	61.0%	
Age (years)				
18-30	47	67	114	
	18.5%	26.4%	44.9%	
31-45	43	70	113	0.417
	16.9%	27.6%	44.5%	
46-60	9	14	23	
	3.5%	5.5%	9.1%	
Above 60	0	4	4	
	0.0%	1.6%	1.6%	
Marital status				
Single	34	79	113	
	13.4%	31.1%	44.5%	
Married	60	66	126	0.000*
	23.6%	26.0%	49.6%	
Widowed	5	0	5	
	2.0%	0.0%	2.0%	
Divorced	0	10	10	
	0.0%	3.9%	3.9%	
Education				
Primary	18	23	41	
	7.1%	9.1%	16.1%	
Secondary	47	108	155	
	18.5%	42.5%	61.0%	
Tertiary	4	24	28	0.000*
	1.6%	9.4%	11.0%	
None	30	0	30	
	11.8%	0.0%	11.8%	

Table 4: Showing conditions do you use the drugs to treat (indications for use)

Variable	Always	Sometimes	Never
General body pains	53	184	17
	20.9%	72.4%	6.7%
Menstrual pains	31	91	132
	12.2%	35.8%	52.0%
Headache	39	202	13
	15.4%	79.5%	5.1%
Malaria	23	207	24
	9.1%	81.5%	9.4%
Body weakness	17	164	73
	6.7%	64.6%	28.7%
Joint pains	53	144	57
	20.9%	56.7%	22.4%
Back pain	58	125	71
	22.8%	49.2%	28.0%
Leg pains	58	99	97
	22.8%	39.0%	38.2%
Hand Pains	43	91	120
	16.9%	35.8%	47.2%
Arthritis	14	101	139
	5.5%	39.8%	54.7%
Stomach	17	160	77
	6.7%	63.0%	30.3%
Chest pain	17	145	92
	6.7%	57.1%	36.2%

Table 5: Correlates of use of pain relievers

Variables	Frequency	%
Why do you prefer the particular pain reliever you are taking now?		
Very effective	128	50.4
Less side effects	12	4.7
Affordable	23	9.1
Prescribed by a HP	72	28.3
Recommended by my family	11	4.3
Friend's recommendation	8	3.1
How do you take your pain reliever?		
As prescribed by healthcare provider	229	90.2
As prescribed by the chemist	252	99.2
As recommended by friends	55	21.7
As recommended on the package label	168	66.1
Anyhow I like	53	20.9
Taking the correct dose as prescribed?	111	43.7
Do you use the pain-relievers because they were once prescribed for you?		
Always	36	14.2
Sometimes	182	71.7
Never	36	14.2
Do you take more than one pain reliever at a go?		
Yes	182	71.7
No	72	28.3
If yes, were they prescribed for you? (n=130)		
Yes	100	55.4
No	82	44.6
Please list the various combination you take or have ever taken (n=113)		
Antibiotic, Antimalarial, Panadol	12	4.7
Cataflam, Norgesic	5	2.0
Dolometa B,Ibucap	10	3.9
Feldene,Anacin,Oruvail	5	2.0
Indocid,Norgesic	5	2.0
Naproxen,Norflex	2	0.8
Norflex, Panadol	2	0.8
Paracetamol	10	3.9
Panadol,Gestid	12	4.7
Panadol, Cough syrup	2	0.8
Panadol,Chloroquine,Indocid	5	2.0
Panadol,Chloroquine,Indocid,Cataflam	15	5.9
Panadol,Indocid,Cataflam	5	2.0
Zyloric,Dolometa B	5	2.0
No response	159	62.6

Regarding taking more than one pain reliever, a statistical significance was recorded among males and females with a p value of 0.005. The same was recorded for marital status, age and educational level. See table 6 for details.

Cost and other barriers to use of Pain Relievers

Regarding the cost of pain relievers, 72.8% respondents sometimes perceived the cost to be high and therefore prohibitory; 54.3% of respondents reported that the distance to procure the medication sometimes stood as a barrier. Other barriers sometimes experienced were out-of-stock syndrome for preferred brands (58.7%), none-effectiveness (57.6%) and inability to afford the cost (72.8%). The attitude of health care providers was never a barrier to 55.6% of respondents. Also, ineffectiveness of the drug, distance from residence and out-of-stock syndromes were never barriers for 39.6%, 37.0% and 35.6% of respondents respectively. Regarding access to pain relievers, 70.9% reported that they always or sometimes had easy access to procure their pain relievers. See table 7 for details.

Most of the respondents (61%) spent N501-2000 per month for their pain medications. See Fig 1.

Table 6: Cross tabulation of taking more than one pain reliever and some demographics

Variable	Do you take more than one pain reliever at a go?		Total	p-value
	Yes	No		
Gender				
Male	61	38	99	
	24.0%	15.0%	39.0%	
Female	121	34	155	0.005*
	47.6%	13.4%	61.0%	
Age (years)				
18-30	100	14	114	
	39.4%	5.5%	44.9%	
31-45	76	37	113	0.000*
	29.9%	14.6%	44.5%	
46-60	6	17	23	
	2.4%	6.7%	9.1%	
Above 60	0	4	4	
	0.0%	1.6%	1.6%	
Marital status				
Single	97	16	113	
	38.2%	6.3%	44.5%	
Married	75	51	126	
	29.5%	20.1%	49.6%	
Widowed	0	5	5	0.000*
	0.0%	2.0%	2.0%	
Divorced	10	0	10	
	3.9%	0.0%	3.9%	
Education				
Primary	36	5	41	
	14.2%	2.0%	16.1%	
Secondary	142	13	155	
	55.9%	5.1%	61.0%	
Tertiary	0	28	28	0.000*
	0.0%	11.0%	11.0%	
None	4	26	30	
	1.6%	10.2%	11.8%	

Table 7: Cost and barriers to use of pain relievers

Variable	Always	Sometimes	Never	Total
High cost	37	194	23	254
	15.2%	72.8%	12.0%	100.0%
Cannot afford it	7	182	61	250
	2.8%	72.8%	24.4%	100.0%
Out of stock in the shop	16	145	89	250
	6.4%	58.0%	35.6%	100.00%
Distance from residence	22	138	94	254
	8.7%	54.3%	37.0%	100.0%
Attitude of the HCP	29	82	139	250
	11.6%	32.8%	55.6%	100.0%
Ineffectiveness of the drug	7	144	99	250
	2.8%	57.6%	39.6%	100.0%
How easily available to buy the pain reliever	6	174	74	254
	2.4%	68.5%	29.1%	100.0%

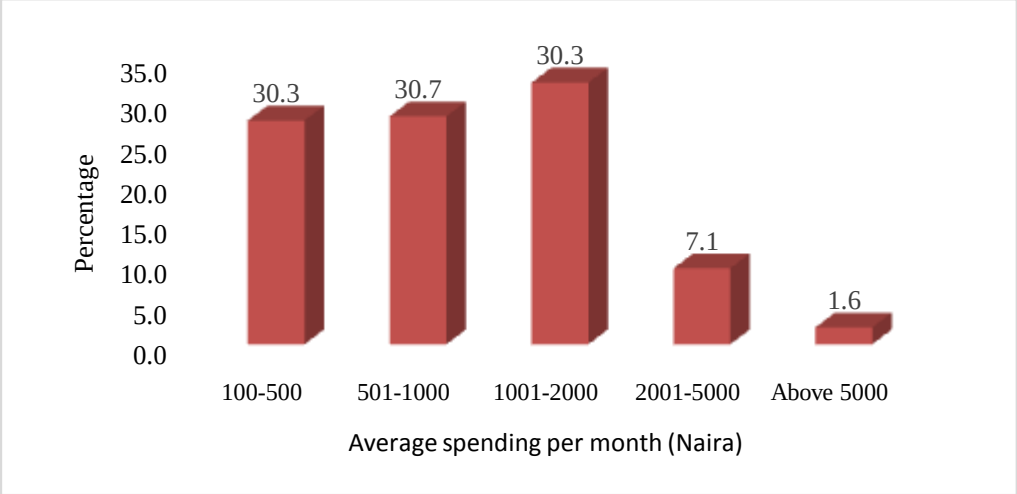

Fig-1: Showing average spending on pain relievers per month

DISCUSSION

Demography:

This survey was aimed at evaluating the prevalence and patterns of use of NSAIDs as pain relievers; more females (61%) were encountered in the study compared to males. Majority of the respondents were secondary school leavers, while 96.5% were Christians. This is not surprising since Opokuma community is in the Niger Delta region with Christianity as the most popular religion [7]. Most of the respondents' annual incomes ranged between N100-500 thousand depicting that most of them had financial constraints in meeting up with their family obligations. A little over half (53.9%) of the respondents lived in the city, the remainder lived in the villages of the community.

Prevalence and patterns of pain management

All respondents in this community had ever taken pain relievers; over 60% of respondents reported a high prevalence of use with ibuprofen as the most frequently used drug. This was closely followed by diclofenac and paracetamol while piroxicam and mefenamic acid were not used frequently. This disparity in frequency of use might be due to the cost of procurement. The level of familiarity with the above analgesics by health care professionals may also have influenced the rate of use. The frequent use of ibuprofen may be due to its rapid and effective action in pain management. This is in line with other studies reported, indicating ibuprofen as one of the most commonly used NSAID [8]. Also, paracetamol has been reported as one of the most frequently used pain relievers due to its low cost, effectiveness and availability with less side effects compared to the NSAIDs [9, 10, 11].

Regarding diclofenac + misoprostol, the increased rate of use despite the high cost is associated with the gastric cyto-protective role that misoprostol plays; the latter is an analogue of prostaglandin which aids in the prevention of ulceration on the walls of the GIT. On the other hand diclofenac is implicated in gastric perforation and obstruction just like other NSAIDs, resulting to ulcer in patients [12]. One significant aspect of this survey report is the spectrum of pain relievers that residents of this community used.

Indications for Pain Reliever

Most of the respondents (over 70%) reported that they used pain relievers general body pains, headaches, and malaria. Majority of the respondents were artisans and workers engaged in some form of hard labor on daily basis which are accompanied with body pains and a lot of stress. In addition, this community is within a malaria endemic area and pain is a common feature of malaria. These factors informed the high prevalence of use of pain relievers as therapeutic options for general body pains, headache and malaria in this community.

Other less frequent indications for pain relievers were chest pain, stomach pain, body weakness, joint pain, back pain, leg pain, hand pain, arthritis and menstrual pain. Some of these expressions of pain are also vocation-related. The reason why pain relievers and NSAIDs in general are one of the most famous drugs prescribed globally is as a result of their effectiveness and the high success rate recorded in patients. Pain relievers inhibit prostaglandins which are pain mediators or pain sensors [3, 14, 15]. Pain is experienced by all and a pain reliever is required to terminate or reduce the threshold of pain. Pains can lead to unrest and death at the end.

Choice and other correlates of use of pain relievers

About half of the respondents reported that their preferred choice of pain relievers was based on effectiveness. This is in line with other reports indicating the effectiveness of NSAIDs in a broad variety of inflammatory diseases with pain as very common feature [16]. About a third and one-tenth of respondents respectively made their choice of pain relievers based on prescription by a health professional and affordability. Indeed over 70% of respondents

sometimes took their medications because they were once prescribed for them. Good enough, some reference is made to these drugs being prescribed for the respondents but it will take an in-depth study to reveal the details of self-medication pre-disposing to chronic over-use or abuse of pain-relievers in this community. The closest revelation is that over 90% followed the instructions of the chemist and health professionals and over 60% followed the instructions contained in the product leaflets. In spite of these, there are still cloudy areas concerning abuse and misuse of pain relievers which call for great concerns. This is because the chronic use and over-use of these drugs have grave health consequences; they are prone to causing various organ damages and other severe systemic adverse effects [17].

A complicating issue to the pattern of use of pain relievers is that over 70% of respondents took more than one pain reliever at a time with only 55.4% informed by prescription by a health profession. The study revealed multi-drug therapies involving a variety of drugs that pre-dispose to significant adverse drug interactions. There is a distinct possibility of increased prevalence of adverse consequences in this population if multi-drug therapies are not properly and professionally informed and managed.

This is in line with studies indicating increased adverse effects following combinations of NSAIDs [18, 19, 20, 21]. Another major source of great concern is the data that over 90% took their pain-relievers as advised by the "chemists" who have very limited technical knowledge of rational drug use; more worrisome is the common practice among these vendors of "mixing" drugs for their clients. These mixtures, aside from containing incompatibilities, often contain two or more brands of the same active ingredient which might lead to over-dose and resultant toxic manifestations. A beneficial combination, however, is the addition of misoprostol which helps in reducing side effect induced by NSAIDs, mostly ulceration of the walls of the GIT [22, 23].

Cost and other barriers to use of Pain Relievers

Regarding the cost of pain relievers, majority (72.8%)of respondents reported a high cost of pain relievers and therefore prohibitory. To this end, over 70% of respondents reported that they were unable to afford their pain relievers. This is against the backdrop of the low financial capabilities of these respondents. Other barriers sometimes experienced were out-of-stock syndrome for preferred brands (58.7%) and none-effectiveness (57.6%).

The attitudes of health care providers, ineffectiveness of the drug, distance from residence and out-of-stock syndromes were never barriers experienced by 35 -55% of respondents in this community. Summarily, the most significant barrier to the purchase and use of pain relievers for people in this community was finance. Most of the people in this community spent N1001 – 2000 per month on pain relievers. This is a huge out-of-pocket expenditure for these people. The recommended use of generic products to lower costs is only limited to public facilities. In addition, there is no price control of pharmaceutical products in Nigeria. Therefore, for a semi-urban community like Opokuma, residents are at the mercy of charlatans who are out to extort. This factor further complicates the poor financial capabilities of these people most of who pay out-of-pocket for their medications in the absence of any form of health insurance.

Procurement costs of pain relievers have been reported to be quite high globally. For example, data revealed that in the United State from 2000-2007 pain relievers cost $17.8 billion annually. The Government of United States intervened by subsidizing the cost since pain relievers were one of the most commonly prescribed medication [24]. This brought some financial relief to the users of NSAIDs. The same kind of intervention is unavailable to users in Nigeria. The realistic alternative to such subsidy is price control, which is also not available in Nigeria. Thus, Nigerians are widely exposed to unusual prohibitively high costs of pharmaceuticals. Their inability to procure needed supplies culminates into non-adherence leading to therapeutic failure, increased morbidity and or death.

Regarding access to pain relievers, about 70% of respondents reported that they always or sometimes had easy access to procure their pain relievers. This may be due to the ready availability varieties of drug vendors including open markets and street vendors in the communities. Moreover, these products, whether POM- or OTC- classified, are all available without prescription. A study conducted in 2008 reported a high surge in the availability of pain relievers and the need to reduce the rate at which they were being distributed into the communities [25].The additional hazard in such communities with illegal and sub-standard drug outlets is the preponderance of fake and adulterated products [26].

About half the respondents claimed that the distance from their homes to place of procurement of medications sometimes served as barrier. This is not surprising since Opokuma clan is a semi urban area and costly pain relievers such as celecoxib, ketoprofen and naproxen may not be readily available in local stores requiring people to travel to distant urban centres to secure supply. This also explains the out-of-stock syndrome experienced by a substantial proportion of residents of this community. The need to travel out of their communities to secure supplies is also a source of stress on the people financially. For those that will buckle over, there is a tendency to seek alternative and irrational means to manage their pains.

Correlations

Data obtained in this study showed no correlations between patterns of use of pain relievers and Gender or Age of respondents. On the other hand, pattern of pain reliever use was correlated with education and marital status. Higher education comes with more enlightenment and improved knowledge. Also, being married calls for greater caution in the use of drugs in general. Data showed that gender, age, marital status and education were all correlated with the use of combination products. Females, younger people, singles and those with lower education tended to use more of multi-drug therapy. The additional and exclusive experience of menstrual pains may explain the greater involvement of females in this act. The younger people are more involved in hard labor and may be experiencing more incidences of pain informing a greater involvement in the act. As usual, education comes with greater knowledge and more cautious use of drugs.

Conclusion and Recommendations

More females were encountered in this study; most of the respondents were below 45 years of age and married; most were artisans and workers with up to secondary education and Christian. Most respondent's had ever used pain relievers for one form of pain or the other that ranged from general body pains, headaches, body weakness, chest pains, leg/hand pains, joint pains and menstrual pains. Among the pain relievers used, ibuprofen was more frequently used compared to others. The high rate of use of pain relievers was due to the level of effectiveness. The pain relievers were used by a great majority (over 90%) of respondents according to the advice of health professionals; about 60% followed the instructions in the product leaflets. Over 70% took pain relievers because they were once prescribed for them. Also, most (over 70%) of respondents sometimes engaged in multi-drug therapy and over half of them did this because the drugs were prescribed for them. The components of multi-drug therapies included two or more pain-relievers, pain relievers in combinations with anti-malarial drugs, antibiotic, antacids, or cough syrups. Pain relievers were reported to be readily available but at high and prohibitive costs. Some of the respondents experienced out-of-stock syndromes, drug ineffectiveness and distance of outlets from their homes as barriers to procuring pain relievers; as much as N2000 was expended per month on pain relievers. Pattern of pain reliever use was not correlated with gender and age but was correlated with education and marital status. Habit of multi-drug therapy was correlated with gender, age, marital status and education.

The prevalence of NSAID use as pain relievers in this community was very high with a tendency towards abuse and misuse. The probable emergence of chronic adverse events is very high in this community. Therefore, there is urgent need to educate the people on the rational use of pain drugs. This education could come from public enlightenment campaigns through the media but more especially through health professionals who interact very frequently with people as reported in the study. Because NSAIDs are inevitable in the management of varieties of pains and inflammatory conditions, access to them should be enhanced by the interventions of governments to reduce procurement costs through price controls and through the provision of appropriate health insurance for the people. To further enhance patient safety, the quality of such products should be guaranteed through properly controlled distribution outlets that block the availability of fake and substandard products. To this end, open drug markets, street vendors and the like should be closed down. Above all, users should be adequately informed and motivated to report, through appropriate channels, all adverse events that they experience from the use of these pain relievers.

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