PREVALENCE AND USE PATTERN OF ANALGESIC USE AMONG STUDENTS OF NIGER DELTA UNIVERSITY, AMASSOMA, BAYELSA STATE

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ABSTRACT

The mainstay 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.

There has been widespread use of NSAIDs reported globally and in the Southern part of Nigeria. In a bid to understand the prevalence and use pattern of pain relievers, a quantitative cross-sectional survey was used to assess the prevalence and use pattern of 216 random students of different faculties in the university. An in-house questionnaire was developed and used to collect data, which was then analyzed by IBM SPSS version 27 and Microsoft Excel (version 2013), for descriptive statistics where mean, frequencies, p-values, and chi-squared tests were obtained respectively. The findings revealed the participants to be more single males (58.33%) between the ages of 18 and 30 years (86.11%).

Five questions assessed the prevalence and use pattern of pain relievers. The majority of respondents were male (58.33%), single (83.33%), and between 18-30 years old (86.11%). Most respondents (67.20%) reported having good knowledge about the pain relievers they used. Hospital pharmacies (77.78%), community pharmacies (50%), and chemists (58.33%) were observed to be the most common sources of pain relievers. Respondents spent between N100 to N500 monthly on pain relievers (47.22%), which were not always prescribed for them (72.22%). The results show that Diclofenac Potassium, Acetaminophen, Aspirin, Meloxicam, and Magnesium salicylate were the most commonly used pain relievers, with 51.85% using them sometimes and 50.93% finding them effective. However, respondents also experienced side effects like heartburn, stomach pain, and chest pain, with 50.40% seeking medical attention when experiencing side effects. The study revealed that there is no significant relationship or association between pain reliever use and gender. This was similar to the side effects reported. However, there was a statistically significant difference between the pattern of NSAID use and student academic level (X^2 = 84.02, df = 6. P$\leq$0.0001). Primarily relies on self-reported data from students, which may be subject to bias and inaccuracy: the small sample size may not be representative of the entire population; the study only includes students from one university, which may not be generalizable to other universities and there is potential for recall bias amongst students on pain reliever use and frequency. Healthcare providers should prioritize patient education and awareness of pain reliever-related side effects; prescribing guidelines and patient education programs should be developed and implemented to promote appropriate use of pain relievers; regulatory agencies should consider implementing stricter guidelines for the use and marketing of pain relievers.

KEYWORDS: NSAIDs, students, Niger Delta, Pain reliever and Bayelsa State.

INTRODUCTION

The mainstay 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 (Owonaro et al, 2017).

There has been widespread use of NSAIDs reported globally and in the Southern part of Nigeria (Wohrl, 2018; Pelletier et al., 2016; McGettigan & Henry, 2013; Massey et al., 2010; Awodele et al., 2015, Awofisayo et al., 2008). The use of NSAIDs has led to about 100,000 hospitalized cases due to the adverse effects ofNSAIDs (Dionne & Berthold, 2001).

Nonsteroidal anti-inflammatory drugs (NSAIDs) are a drug class, well known and approved for use as antipyretic, anti-inflammatory, and analgesic agents (Phillips & Currier, 2004). NSAIDs are typically divided into groups based on their chemical structure and selectivity.

Pain relievers, also known as analgesics, are medications that are used to relieve pain without causing loss of consciousness (Dawson, 2018). They work by blocking the production of certain chemicals in the body that cause pain (National Institute of Health, 2020). Examples of pain relievers include acetaminophen and Nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and aspirin (Dawson, 2018). They are medications that are used to manage pain by reducing the transmission of pain signals to the brain or by altering the brain's perception of pain (Merskey & Bogduk, 1994). They can be classified into different types, including opioids, NSAIDs, and acetaminophen, each with different mechanisms of action and side effect profiles (Merskey & Bogduk, 1994). The International Association for the Study of Pain defines pain relievers as substances that are used to alleviate physical suffering and discomfort caused by injury, disease, or other conditions (International Association for the Study of Pain, 2019). Pain is defined as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage" (International Association for the Study of Pain, 1994). Pain is typically categorized as either acute or chronic (Taylor, 2008). It is usually transitory, lasting only until the noxious stimulus is removed or the underlying damage has healed. However, some painful conditions, such as Rheumatoid Arthritis, Peripheral neuropathy, Cancer, Idiopathic pain, etc., may persist for years (Owonaro et al., 2016).

Apart from categorizing pain according to duration, pain can also be categorized according to the etiology, as either caused by nerve damage (Neuropathic) and/or caused by tissue damage (Avascular necrosis) (Woolf, 2010).

Primary objective
To determine the prevalence and pattern of pain relievers (Diclofenac Potassium, Acetaminophen, Aspirin, Meloxicam, Magnesium salicylate) use among the students of Niger Delta University, Wilberforce Island, Bayelsa State, South-South Nigeria.

Secondary objectives
i. To determine the most used pain reliever (Diclofenac Potassium, Acetaminophen, Aspirin, Meloxicam, Magnesium salicylate) among male and female students of theUniversity.
ii. To examine the knowledge of pain relievers and their side effects among respondents.
iii. To determine the sources of pain relievers used by respondents.
iv. To determine the cost of pain relievers, and affordability of pain relievers in Amassoma, Bayelsa State.
v. To determine the common pain relievers used by respondents and their perceived effectiveness and side effects.

METHOD
Study Population: Students of Niger University, Amassoma, Bayelsa State. The student community is made up of 13 Faculties, with an estimated total number of 20,000 students.

Study setting: The study was conducted at the Niger Delta University, Wilberforce Island, Amassoma, Bayelsa State. The University campus and environs are home to thousands of students from all parts of the country, with diverse socio-economic, cultural, and health statuses.

Study design: This was a quantitative cross-sectional observational study.

Research instrument: A validated self-report questionnaire was available physically and was employed for gathering relevant information, which included patients' demographics, the knowledge of pain relievers' use and side effects, the most common NSAIDs used by the respondents, the common medical conditions for which pain relievers are used, the manner/ context surrounding their use and the availability, affordability and the source of pain relievers' procurement. This was after written informed consent from the participants.

Inclusion criteria: All students of either gender
a. Age > 18 years

3.1 Exclusion criteria
Adolescents (students who are less than 18), Pregnant students, Students who are unwilling to partake, Allergic/ hypersensitive patients, Participants involved in the pilot study.

Data Collection Tool: Self-report questionnaire or in-house questionnaire was used.

Measures: A semi-structured self-report questionnaire was designed based on the objectives of the study. The questionnaire was written in English and contained both 'open' and 'closed' -ended questions and was divided into four sections. The first section elicited responses on participants'' socio-demographics. The

demographic features to be investigated are gender, marital status, age, faculty, level, residence, and ethnicity of participants. The second section contained questions on the knowledge of pain relievers' use and side effects, while the third section asked questions on the prevalence and pattern of pain relievers' use, reflecting the most common pain relievers used by the respondents, the common medical conditions for which pain relievers are used and the manner of use of pain relievers by the participants. The fourth section requested information on the availability, affordability, and source of pain relievers' procurement. This study instrument was adapted from the short-form Pain Medication Attitude, Questionnaire (PMAQ-14) and the research tool used in the work of Owonaro et al, 2017. The PMAQ-14 tool was designed to assess prevalence, pattern, knowledge, attitude, reported side effects, misuse, and services provided towards pain relievers prescribing and dispensing among the users. Self-report questionnaires are designed, pre-tested, and administered after validation.

Pilot Study: A pilot study was carried out with ten (10) pain reliever users and the results were entered into the Statistical Package for the Social Sciences (SPSS) to check if the questions elicited the right responses and could be understood. The respondents who took part in the pilot study were excluded from the actual study, to avoid any bias. Amendments were made where ambiguity was observed. Furthermore, during the pilot study, the researcher was available to give more explanations to the respondents. An average of 10 to 15 minutes was required to fill out each questionnaire.

Ethical Consideration: Ethical approval was sought from the management of the Niger Delta University, Wilberforce Island, Amassoma, Bayelsa State. This followed an assurance that the confidentiality of the patients would be strictly maintained.

Sampling calculation or power calculation: An online sample size calculator was used to derive sample data from the total number of students in Niger Delta University, Amassoma, Bayelsa State. **Using the Yamane formula: N= 20000/ [1+(20000)(0.05)^2] = 392.**

Sampling Techniques: From the calculated sample size, a Convenience and Voluntary response sampling technique was used to get respondents for this study from all faculties in the university, based on the population size, number of faculties, and ease of access.

Study Procedure: On the day of the study, the researcher met with the students and an introduction was made. Thereafter, the author gave a detailed explanation of what the study entailed, and what was to be expected of them. The self-report questionnaires and consent forms were then provided with the study participant information sheet. The study questionnaire was distributed to the participants. On completion of the self-report questionnaire, the study tools were retrieved immediately to prevent the participants from sharing information about the study. Questionnaires were then checked to ensure appropriate filling was done. Those who completed the questionnaire were thanked for their willingness to participate in the study. The above process is estimated to have lasted for a period of 20 to 35 minutes.

Data Analysis: The data generated was analyzed using Statistical Package for the Social Sciences (SPSS) version 27 and/or Microsoft Excel. The result was presented using descriptive statistics and expressed as simple percentages. Average values were presented in mean and standard deviation. Inferential statistics involving hypothesis testing, chi-squared test, etc, was also used to analyze the result.

RESULTS

Demographic characteristics of respondents

Participants that partook in this study were more single males (58.33%) between the ages of 18 and 30 years (86.11%). This is as is shown in table 4.1 below.

Table 4.1: Demographic characteristics of respondents (N=216).		Count	%
Gender	Male	126	58.33
	Female	90	41.67
Marital status	Single	180	83.33
	Married	30	13.89
	Others	6	2.78
Age	18-30	186	86.11
	31-45	24	11.11
	46-60	6	2.78
Faculty	Pharmacy	42	19.44
	Basic Medical/Clinical Sciences	24	11.11

	Nursing	0	0.00
	Sciences	30	13.89
	Engineering	0	0.00
	Arts	24	11.11
	Management Sciences	18	8.33
	Social Sciences	6	2.78
	Environmental Sciences	42	19.44
	Agricultural Sciences	0	0.00
	Education	24	11.11
	Law	6	2.78
Level	100	57	26.39
	200	51	23.61
	300	37	17.13
	400	36	16.67
	500	29	13.43
	600	2	0.93
	Postgraduate	4	1.85
Residence	School hostel	72	33.33
	off campus	144	66.67
Ethnicity	Ijaw	124	57.41
	Urhobo	42	19.44
	Hausa	6	2.78
	Yoruba	14	6.48
	Igbo	8	3.70
	Others	22	10.19

There was no statistically significant difference between knowledge of NSAID use and student academic level ($X^2 = 2.90$. df = 1, p = 0.088).

Since the p-value is greater than 0.05, we fail to reject the null hypothesis (H0) and conclude that there is no significant relationship between pain reliever use and gender.

There was a statistically significant difference between the pattern of NSAID use and student academic level ($X^2 = 84.02$, df = 6. P 0.000000001).

Knowledge of Pain relievers and side effects

All the respondents reported having made use of pain relievers and made reported preferences to currently used pain relievers due to observed effectiveness (44.44%), and also claimed that they have good knowledge about the pain relievers they are taking (38.89%). Such knowledge reported was on the dose, duration, frequency, and possible interaction with alcohol and food (67.20%). This is contained in Table 4.2 and Table 4.3.

Table 4.2: Usage of pain relievers.		Count	%
Have you ever used pain relievers?	Yes	216	100.00
	No	0	0.00
Why do you prefer the particular pain reliever you have taken before or are taking now?	Very effective	96	44.44
	fewer side effects	0	0.00
	Affordable	56	25.93
	prescribed by a health professional	10	4.63
	recommended by family	54	25.00
	recommended by friend	0	0.00
	advert on the media	0	0.00
	Other reasons	0	0.00
Please, state your level of knowledge about the side effects of the pain relievers you use	Excellent	24	11.11
	very good	60	27.78
	Good	84	38.89
	Poor	24	11.11
	not at all	24	11.11

Table 4.3: Depth of knowledge on pain relievers taken.	Very well		Average		not at all	
	Count	%	Count	%	Count	%
The correct dose to take	58	26.85	129	59.72	29	13.43
How long it should take	9	4.17	175	81.02	32	14.81
How frequently it should be taken	6	2.78	208	96.30	2	0.93
Whether it can be taken with alcohol	1	0.46	122	56.48	93	43.06
Whether it can be taken with food	31	14.35	158	73.15	27	12.50
Whether it can be taken on an empty stomach	6	2.78	122	56.48	88	40.74
Whether it can be taken with antacids	24	11.11	102	47.22	90	41.67
Average	19	8.93	145	67.20	52	23.88

The respondents also reported that they sometimes (41.90%) experience side effects such as heartburn, stomach pain, chest pains, blood in urine, blood in stool, swellings, and sweating. In the event of experiencing such side effects, they sometimes (50.40%) visit the doctor, the pharmacist, or the nurse. This is contained in table 4.4 below.

Table 4.4: Side effects experienced and actions taken while consuming pain relievers (N=216).	Always		Sometimes		Never	
	Count	%	Count	%	Count	%
Side effects experienced while consuming pain relievers						
Heartburns	13	6.02	122	56.48	81	37.50
Stomach pains	17	7.87	119	55.09	80	37.04
Chest pains	18	8.33	117	54.17	81	37.50
Blood in urine	12	5.56	5	2.31	199	92.13
Blood in stool	8	3.70	4	1.85	204	94.44
Body swelling	9	4.17	98	45.37	109	50.46
Sweating	59	27.31	125	57.87	32	14.81
Other common side effects	3	1.39	134	62.04	79	36.57
Average	17	8.04	91	41.90	108	50.06
Actions taken when experiencing side effects						
Visit your doctor	6	2.78	108	50.00	102	47.22
Visit your pharmacist	6	2.78	138	63.89	72	33.33
Visit your nurse	6	2.78	108	50.00	102	47.22
Visit chemist	60	27.78	84	38.89	72	33.33
Visit family	30	13.89	162	75.00	24	11.11
Visit friends	0	0.00	162	75.00	54	25.00
Visit herbalist	0	0.00	0	0.00	216	100.00
Average	15	7.14	109	50.40	92	42.46

There was no statistically significant difference between knowledge of NSAID use and student academic level. $X^2 = 59.02$, df = 6. P = 0.89

Approach to pain management
Participants also reported that about 52.78% of the time they sometimes go to the hospital, pharmacy, and other health-related agencies in the event of pain. Such pains are most times reported to be malaria (50%), body weakness (61.11%), chest pain (50%), and arthritis (47.22%). This is shown in table 4.5 below.

Table 4.5: Actions and conditions of use of pain relievers.		Always		Sometimes		Never	
		Count	%	Count	%	Count	%
Actions in the event of pain							
Go to Hospital		6	2.78	126	58.33	84	38.89
Go to Pharmacy		30	13.89	186	86.11	0	0.00
Go to masseuses		24	11.11	84	38.89	108	50.00
Go to church/mosque		30	13.89	132	61.11	54	25.00
Go to Patent Medicine Vendors		6	2.78	150	69.44	60	27.78
(Chemists)		0	0.00	78	36.11	138	63.89
Go to the Herbal clinic/practitioner		6	2.78	78	36.11	132	61.11
Visit street medicine vendors		6	2.78	78	36.11	132	61.11
		14	6.25	114	52.78	89	40.97
A condition where pain relievers are used							
Headache		120	55.56	48	22.22	24	11.11
General body pain		144	66.67	72	33.33	0	0.00
Menstrual pain		72	33.33	54	25.00	90	41.67
Malaria		54	25.00	108	50.00	54	25.00
Body weakness		54	25.00	132	61.11	30	13.89
Joint pains		60	27.78	102	47.22	54	25.00
Back pain		60	27.78	102	47.22	54	25.00
Leg pain		60	27.78	72	33.33	84	38.89
Hand/arm pain		60	27.78	72	33.33	84	38.89
Arthritis		30	13.89	102	47.22	84	38.89
Stomach pain		0	0.00	102	47.22	114	52.78
Chest pain		6	2.78	108	50.00	102	47.22
Other pains		30	13.89	132	61.11	54	25.00
Average		58	26.71	93	42.95	64	29.49

		Diclofenac Potassium			Acetaminophen			Aspirin			Meloxicam			Magnesium salicylate		
		Very effective	Effective	Not effective	Very effective	Effective	Not effective	Very effective	Effective	Not effective	Very effective	Effective	Not effective	Very effective	Effective	Not effective
Diclofenac Potassium	Always	0	0	6	0	0	6	0	0	6	0	0	6	0	0	6
	sometimes	0	186	0	108	78	0	54	78	54	54	108	24	54	108	24
	Never	0	0	24	0	24	0	0	0	24	0	0	24	0	0	24
Acetaminophen (Paracetamol)	Always	0	132	30	108	48	6	54	24	84	54	54	54	54	54	54
	sometimes	0	54	0	0	54	0	0	54	0	0	54	0	0	54	0
	Never	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	sometimes	0	108	0	30	78	0	0	78	30	30	78	0	30	78	0
	Never	0	48	24	48	24	0	24	0	48	24	0	48	24	0	48
Aspirin	Always	0	30	6	30	0	6	30	0	6	0	30	6	0	30	6
	sometimes	0	108	0	30	78	0	0	78	30	30	78	0	30	78	0
	Never	0	48	24	48	24	0	24	0	48	24	0	48	24	0	48
Meloxicam	Always	0	30	6	30	0	6	0	0	36	30	0	6	30	0	6
	sometimes	0	108	0	30	78	0	30	78	0	0	108	0	0	108	0
	Never	0	48	24	48	24	0	24	0	48	24	0	48	24	0	48
Magnesium salicylate	Always	0	30	6	30	0	6	0	0	36	30	0	6	30	0	6
	sometimes	0	108	0	30	78	0	30	78	0	0	108	0	0	108	0
	Never	0	48	24	48	24	0	24	0	48	24	0	48	24	0	48

Respondents also reported that the drugs taken were Diclofenac Potassium, Acetaminophen, Aspirin, Meloxicam, and Magnesium salicylate which were sometimes taken (51.85%) and were also reported to be effective (50.93%). This is shown in table 4.6 below. Respondents also report that pain relievers were taken in the study environment as recommended by family or friends (88.89%) or as labeled on the drug product (75%). Other drugs mostly taken among pain relievers were reported to include hot balms, ointments (75%), creams (63.89%), antibiotics, and antacids (61.11%). This is shown in table 4.7 below.

Table 4.6: Frequency and effectiveness.

Frequency	Always Count	%	Sometimes Count	%	Never Count	%
Diclofenac Potassium	6	2.78	186	86.11	24	11.11
Acetaminophen	162	75.00	54	25.00	0	0.00
(Paracetamol)	36	16.67	108	50.00	72	33.33
Aspirin	36	16.67	108	50.00	72	33.33
Meloxicam	36	16.67	108	50.00	72	33.33
Magnesium salicylate	36	16.67	108	50.00	72	33.33
Average	52	24.07	112	51.85	52	24.07
Effectiveness	**Very effective** Count	%	**Effective** Count	%	**Not effective** Count	%
Diclofenac Potassium	0	0.00	186	86.11	30	13.89
Acetaminophen	108	50.00	102	47.22	6	2.78
(Paracetamol)	54	25.00	78	36.11	84	38.89
Aspirin	54	25.00	78	36.11	84	38.89
Meloxicam	54	25.00	108	50.00	54	25.00
Magnesium salicylate	54	25.00	108	50.00	54	25.00
Average	54	25.00	110	50.93	52	24.07

Table 4.7: Pattern of pain relievers' use.

	Always Count		Sometimes Count		Never Count	
How do you take your pain relievers?						
As prescribed by a healthcare provider	78	36.11	132	61.11	6	2.78
As recommended by chemist	138	63.89	78	36.11	0	0.00
As recommended by friends/ family	0	0.00	192	88.89	24	11.11
As stated on the package label	30	13.89	162	75.00	24	11.11
Anyhow I like	0	0.00	102	47.22	114	52.78
Average	49	22.78	133	61.67	34	15.56
Other drugs taken alongside pain relievers						
Hot balms	0	0.00	162	75.00	54	25.00
Ointments	0	0.00	162	75.00	54	25.00
Creams	0	0.00	138	63.89	78	36.11
Antibiotics	54	25.00	132	61.11	30	13.89
Antacids(anti-ulcer drugs)	30	13.89	132	61.11	54	25.00
Anointing oil	30	13.89	132	61.11	54	25.00
Others	6	2.78	132	61.11	78	36.11
Antimalarial	84	38.89	102	47.22	30	13.89
Herbs	0	0.00	102	47.22	114	52.78
Sprays	6	2.78	102	47.22	108	50.00
Lotion	6	2.78	102	47.22	108	50.00
Cough syrup	0	0.00	78	36.11	138	63.89
	18	8.33	123	56.94	75	34.72

Availability of pain relievers

Respondents in this study also reported spending N100 to N500 naira every month (47.22%) on pain relievers that were not prescribed for them (72.22%). The pain relievers were reported to be always easily available (58.33%) and very affordable (58.33%). The most common places where such pain relievers were gotten from are hospital pharmacies (77.78%),

community pharmacies (50%), and chemists (58.33%).   This is shown in Table 4.8 and Table 4.9 below.

Table 4.8: Pain relievers and financial implications.		Count	%
On average, how much in naira, do you spend on pain relievers per month	100 – 500	102	47.22
	500-1000	0	0.00
	1000-2000	54	25.00
	2000-5000	60	27.78
	above 5000	0	0.00
Do you take more than one pain reliever at a goal?	Yes	60	27.78
	No	156	72.22
If yes, were they prescribed for you?	Yes	0	0.00
	No	216	100.00
How easily available are your pain relievers?	Always	126	58.33
	Sometimes	90	41.67
	Never	0	0.00
How affordable are your pain relievers?	Very affordable	126	58.33
	moderately affordable	84	38.89
	Not always affordable	0	0.00
	very expensive	6	2.78

Table 4.9: Sources of pain relievers.	Always		Sometimes		Never	
	Count		Count		Count	
Hospital Pharmacy	0	0.00	168	77.78	48	22.22
Community Pharmacy	78	36.11	108	50.00	30	13.89
Chemist(Patent medicine store)	90	41.67	126	58.33	0	0.00
Street drug vendor	6	2.78	54	25.00	156	72.22
Supermarket	0	0.00	102	47.22	114	52.78
Market	0	0.00	60	27.78	156	72.22
Inside bus	0	0.00	6	2.78	210	97.22
Do you use pain relievers because they were once prescribed for you in the past?	156	72.22	30	13.89	30	13.89
	41	19.10	82	37.85	93	43.06

DISCUSSION OF KEY FINDINGS

The demographic characteristics of students who use pain relievers

The results showed that the majority of respondents were male (58.33%), single (83.33%), and between 18-30 years old (86.11%). There was no statistically significant difference between gender and pattern of NSAID use. This might be due to the same physical activity undertaken by all students. However, there was a statistically significant difference between the pattern of use and academic level. This might be connected to the daily activities and academics undertaken by the student. It is expected that student academic stress increases as they go higher. This aligns with previous studies that found young adults, particularly students, to be frequent users of pain relievers (Kwabena, 2017; Tshabalala, 2018). This demographic profile suggests that pain reliever use is prevalent among young adults, which may be attributed to their lifestyle, academic pressure, and social factors. This is also consistent with previous studies (Farah et al., 2023; Vaishnavi et al., 2017).

To examine the knowledge of pain relievers and their side effects among respondents

The findings from this work indicate that most respondents (67.20%) reported having good knowledge about the pain relievers they used. There was no statistically significant different in knowledge of NSAID use and the student level. This is so because they were not medical students. However, this contradicts previous studies suggesting a lack of knowledge among students (Kwabena, 2017; Tshabalala, 2018). This discrepancy may be because most respondents (44.44%) preferred pain relievers based on their observed effectiveness, indicating a trial-and-error approach to pain management. This highlights the need for education on proper usage and potential side effects.

To determine the sources of pain relievers used by respondents

The findings also show that hospital pharmacies (77.78%), community pharmacies (50%), and chemists (58.33%) are the most common sources of pain relievers. This aligns with previous studies (Farah et al., 2023; Vaishnavi et al., 2017), indicating easy accessibility and availability of pain relievers. However, this may contribute to overuse or misuse, as respondents may not always consult healthcare professionals before using pain relievers (Blower, 1996; McGettigan & Henry, 2013).

To examine the financial implications of pain relievers used among respondents

The findings from this research indicate that respondents spent between N100 to N500 monthly on pain relievers (47.22%), which were not always prescribed for them (72.22%). This suggests that students may be incurring unnecessary expenses on pain relievers, which could be a burden on their finances (Haroutiunian et al., 2010).

To determine the common pain relievers used by respondents and their perceived effectiveness and side effects

The results show that Diclofenac Potassium, Acetaminophen, Aspirin, Meloxicam, and Magnesium salicylate were the most commonly used pain relievers, with 51.85% using them sometimes and 50.93% finding them effective. However, respondents also experienced side effects like heartburn, stomach pain, and chest pain, with 50.40% seeking medical attention when experiencing side effects. This highlights the need for education on proper usage and potential side effects to ensure safe and effective pain management, which is a gap in existing literature.

Summary and Conclusion

Participants that partook in this study were more single males (58.33%) between the ages of 18 and 30 years (86.11%). All the respondents reported having made use of pain relievers and made reported preferences to currently used pain relievers due to observed effectiveness (44.44%), and also claimed that they have good knowledge about the pain relievers they are taking (38.89%). Such knowledge reported was on the dose, duration, frequency, and possible interaction with alcohol and food (67.20%).

The respondents also reported that they sometimes (41.90%) experience side effects such as heartburn, stomach pain, chest pains, blood in urine, blood in stool, swellings, and sweating. In the event of experiencing such side effects, they sometimes (50.40%) visit the doctor, the pharmacist, or the nurse. Participants also reported that about 52.78% of the time they sometimes go to the hospital, pharmacy, and other health-related agencies in the event of pain. Such pains are most times reported to be malaria (50%), body weakness (61.11%), chest pain (50%), and arthritis (47.22%).

Respondents also reported that the drugs taken were Diclofenac Potassium, Acetaminophen, Aspirin, Meloxicam, and Magnesium salicylate which were sometimes taken (51.85%) and were also reported to be effective (50.93%). This is shown in table 4.6 below. Respondents also report that pain relievers were taken in the study environment as recommended by family or friends (88.89%) or as labeled on the drug product (75%). Other drugs mostly taken among pain relievers were reported to include hot balms, ointments (75%), creams (63.89%), antibiotics, and antacids (61.11%).

Respondents in this study also reported spending N100 to N500 naira every month (47.22%) on pain relievers that were not prescribed for them (72.22%). The pain relievers were reported to be always easily available (58.33%) and very affordable (58.33%). The most common places where such pain relievers were gotten from are hospital pharmacies (77.78%), community pharmacies (50%), and chemists (58.33%).

CONTRIBUTION TO LITERATURE

This study's findings have contributed to an existing body of knowledge that cough and other minor reasons are implicated in NSAIDs use in this part of the world.

CONFLICT OF INTEREST
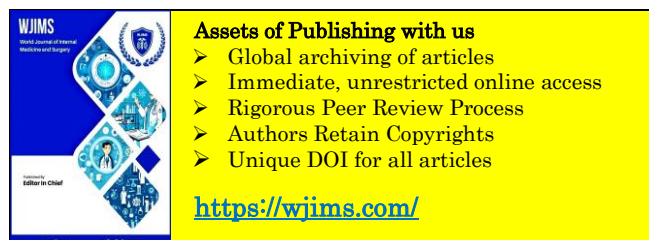The researchers declare that there was no conflict of interest.

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