Knowledge of Non-Narcotic Analgesics and their Use among Non-Medical Students of the University of Lagos

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ABSTRACT

Background: Analgesics are one of the most seriously abused over-the-counter drugs in Nigeria due to different misconceptions, lack of awareness etc. They are also readily available and accessible. The aim of this study was to assess the level of knowledge and describe the use of analgesics among undergraduates of the University of Lagos.

Method: A cross-sectional survey of undergraduates of the University of Lagos, Akoka campus was done using a pretested questionnaire. The survey instrument comprised twenty-two questions in three sections of demographics, habits and knowledge. A total of 384 valid respondents were obtained across seven non-medical Faculties in the University. Stratified sampling technique was used to ensure that the sampling size in each Faculty is proportional to the Faculty population. Data was collated and analysed using SPSS 20. Descriptive analysis, student t-test, chi-square and Fishers exact tests were done as appropriate.

Results: There was no statistically significant difference in use (χ=2.668, p> 0.05) and knowledge of analgesics (t= -1.104, p>0.05) between the male and female respondents. The most used painkiller was paracetamol (71.7%). Only about 23.4% of the respondents read the leaflets before using the drugs. About 45% of the respondents self-medicated with the analgesics based on the previous experiences they had. There was a statistically significant difference in the knowledge of pain killers across the five class levels with the 500 level students having the best knowledge. (F= 12.717, p < 0.05).

Conclusion: The knowledge of analgesics is very poor among non-medical students of the University of Lagos as majority of them do not have adequate knowledge of analgesics. Also,

there is a lot of analgesic self-medication practice. There is a need to educate these students on the use of analgesics.

Keywords: Analgesics Use, University of Lagos, Students, Knowledge,

INTRODUCTION

Pain has been defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage[1]. Pain is nearly inevitable in all walks of life and when it occurs, analgesics, which are readily available-are the drugs of choice.

Analgesics, commonly known as pain killers are substances which work in various ways to relieve different types of pain experienced in the body. Over the counter (OTC) analgesics that are generally used by public are paracetamol, non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and aspirin and weak opioids such as tramadol, a commonly abused drug.

In choosing analgesics, the severity and response to other medications determines the choice of the agent; the World Health Organization pain ladder specifies mild analgesics as its first step[2].

Analgesics, though relatively safe, are among the commonly used and abused drugs because they are readily available, accessible and some like tramadol are also dependence liable. Combination of analgesics are frequently used without prescriptions and these sometimes contain same active ingredient, hence causing an overdose. Rahman *et al* reported in their study how many people concomitantly take the same analgesics of different brands thereby contributing to analgesic nephropathy[3].

Apart from the ready accessibility and availability of analgesics, inadequate knowledge about analgesics may be another reason for its misuse.

Documented studies have revealed analgesic misuse in Nigeria. Okpalugo *et al* in their study on the "misuse of some OTC analgesics in Abuja, Nigeria" reported that 20.65% of respondents on acetaminophen and ibuprofen exceeded the maximum daily dose. The study also showed more than two-thirds of the respondents were not aware of the risks involved[4].

In another study carried out in Nsukka, Eastern Nigeria on patients' attitudes towards analgesic usage, Builders & Aguwa revealed that 79.8% of the patients were on analgesic self-medication. They showed that patients often have inadequate knowledge and misconceptions on the use of analgesics and suggested that improved patient education may reduce unnecessary analgesic usage and chronic renal failure in the community[5].

In a community survey carried out in Zawan B ward, Jos, Agba *et al* showed that analgesic abuse was present in 22.6% of the respondents. They suggested that the sale and consumption *of* analgesics should be restricted by legislation[6].

Among the youths, use of analgesics is very rampant as there is the need to tackle commonly occurring pains as headaches, menstrual pains, back pain, migraine, muscular pains etc. People in this age group due to their activities and agility have great need for analgesics and sometimes these drugs are misused [7,8].

There are studies around the world on analgesic use among youths, in a study on the 'pattern of self-medication of analgesics among Iranian students in central Iran', Sarahroodi *et al* showed that 76.6% of the respondents had used analgesics in self-medication in the previous three months. The most commonly used source of information for self-medication with analgesics was advice from friends and family followed by previously prescribed medications[9].

Another study carried out in 2010 on the use and understanding of analgesics among Aston University students showed that students who did not use analgesics gained slightly higher and statistically significant scores on the knowledge-based questions in the interview than those who did use analgesics ($p=0.040$)[10].

The aim of this study was to assess the analgesic-use habits and knowledge among the non-medical students of the University of Lagos. It is assumed that whatever knowledge of analgesics this population of students have is not as a result of their on-going professional training as the case may be with medical and allied professional undergraduates.

It is important to capture the knowledge of analgesic among our youths in order to be able to design relevant programmes and outlets to reach out to them with appropriate information on analgesic use. Information supplied will empower our youths and enable them to take right decisions as regards analgesics use.

METHODS

This cross-sectional study was carried out among randomly selected students across seven out of the eight non-medical faculties of University of Lagos using a previously validated self-administered questionnaire[10]. The only non-medical faculty that was not sampled was the Faculty of Law where pretesting of the questionnaire was carried out. Slight modifications were made after the pretest. The questionnaires were hand-distributed.

The sample size of 384 was calculated from the known population size of non-medical undergraduates of the University of Lagos at the time of this study. In calculating the sample size, the desired margin of error used was 5%, confidence level of 95% (p) was also used. A confidence level of 95% corresponds to a Z-score of 1.96, the proportion of the population affected was assumed to be assumed to be 0.5.

Stratified sampling technique was done using proportionate allocation strategy. This ensures that the sampling size in each Faculty is proportional to the Faculty population.

The validated questionnaire contains a set of 22 questions divided into three sections which capture the demographic data, assessment of analgesic taking habits and the knowledge of analgesics respectively.

All data collected were coded, analysed and presented in frequencies, percentages and appropriate statistical inferences made using chi-squared contingency test, student's t-test and fisher's exact test, at statistical significance $p < 0.05$. (95% CI). SPSS version 20.0 was used in the analysis.

RESULTS

Demographics

There were 384 students involved in this study: 194 (50.5%) males and 190 (49.5%) females, 315 (82.0%) of the students admitted their use of painkillers (Table 1). There was no statistically significant difference in pattern of analgesic usage in both genders (X^2= 2.668 P value > 0.05). Likewise, no significant association existed between level of study and usage of analgesics (P >0.05).

Table 1: Demographic data of respondents

Total (n = 384)	**n**	**(%)**
Gender		
Male	194	50.5
Female	190	49.5
Age (years)		

<19	134	34.9
20-25	218	56.8
26-29	27	7.0
>30	5	1.3
Do you use analgesics? YES	315	82

Table 2: Pattern of Analgesic use relating with Gender and Level of Study

	Use of Analgesics		***P* value**
	Yes	**No**	
Gender			0.112
Male	153	41	
Female	162	28	(X^2= 2.668)
Level of Study			
100	51	9	
200	135	30	0.337
300	77	12	
400	44	15	
500L	8	3	

Assessment of Analgesic-Taking Habits

One hundred and one (101) students representing 33.3% of our respondents that use analgesics admitted to being chronic users of analgesics, with headache (57.8%) been the most selected reason for the use of these analgesics (Fig.1).

After commencing the use of these analgesics with no improvement in their symptoms, 61.7% of students said it takes them 1-2 weeks to consult their doctor (Fig.2).

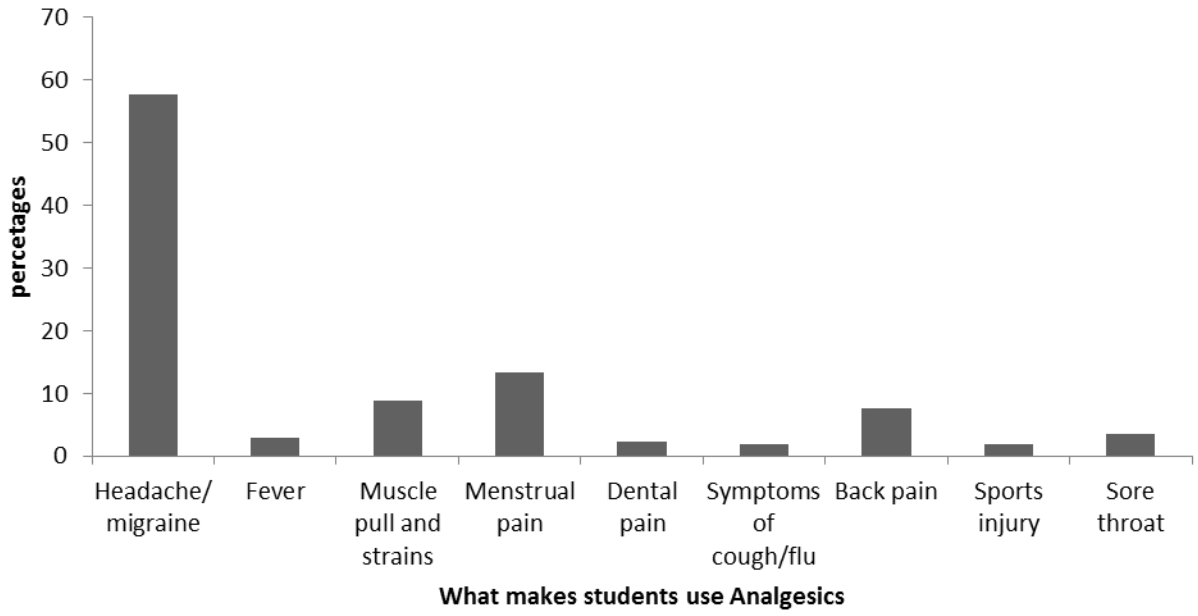

Figure 1: The conditions that make Students take Analgesics.

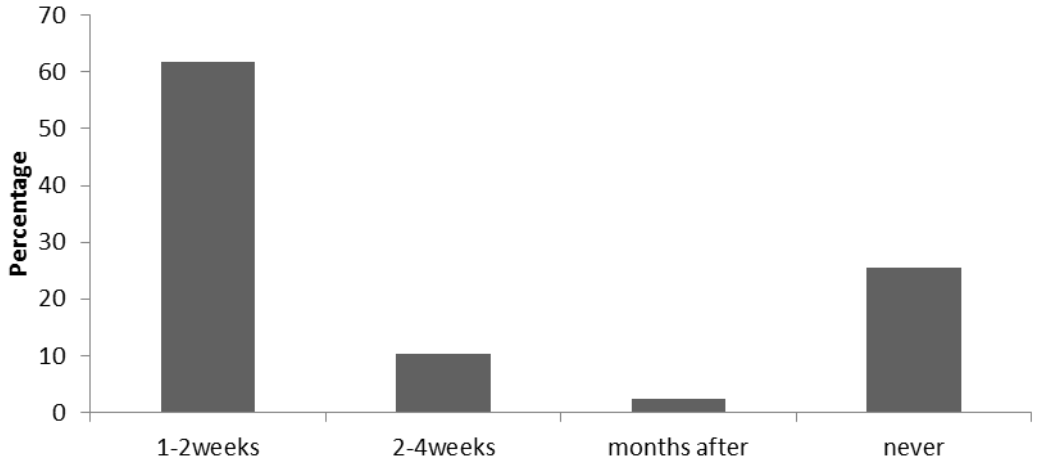

Figure 2: Time it takes them to consult a doctor if symptoms persist.

The most popular analgesic used by the students was paracetamol (75.24%) (Fig. 3) Majority of the students (75.6%) reported they used painkillers only when they felt pain (Table 3) and during those instances only 23.4% of them do read the leaflet insert on direction for use (Table 4).

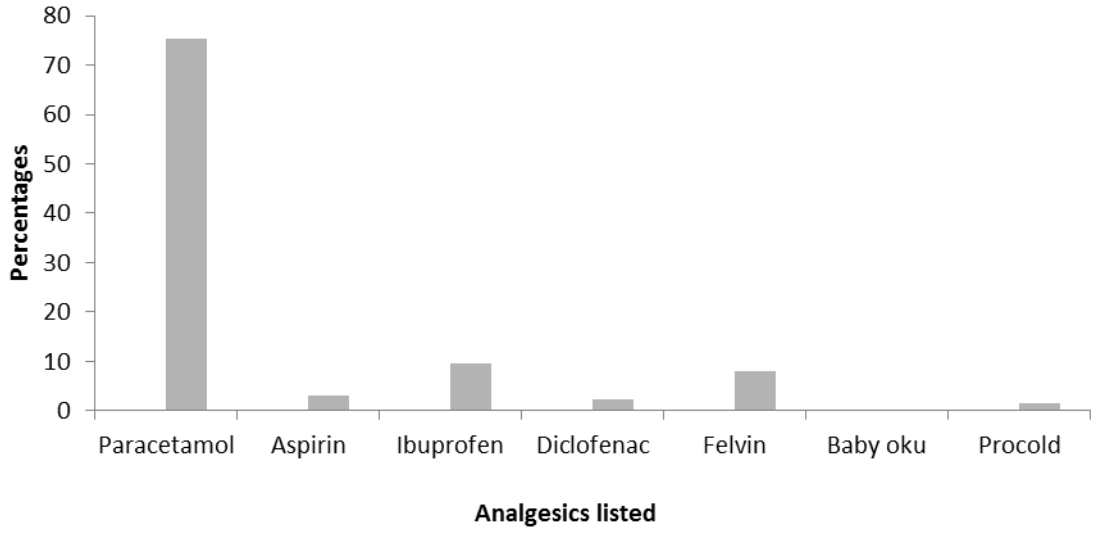

Figure 3: The most preferred analgesics used by the students.

Table 3: Distribution of how often students use analgesics

Total	**n**	**%**
Daily	7	2.2
Weekly	16	5.1
Monthly	31	9.8
Yearly	23	7.3
Only when one feels the pain	238	75.6
Total	**315**	**100**

Table 4: Distribution of students based on those who read leaflets inserts

Read the Leaflet	**n**	**%**
Always	74	23.5
Sometimes	168	53.3
Never	73	23.2
Total	**315**	**100**

As regards respondents' source of information about the analgesics they take, 47.94% of the respondents said their source of information from the pharmacist while 22.86% said they got their information from friends and family (Table 5). 45% of our respondents attributed their

self-medication with analgesics to the previous experiences they had, 16.51% said it was due to convenience and 6.67% said it was due to their lack of time (Fig.4)

Table 5: Students source of drug information

Source of Information	**n**	**(%)**
Physician	56	17.8
Pharmacist	151	47.9
Friends and family	72	22.9
Media (TV, Newspaper)	6	1.9
Internet	9	2.9
I don't know	10	3.2
Physician and pharmacist	10	3.2
Total	**315**	**100**

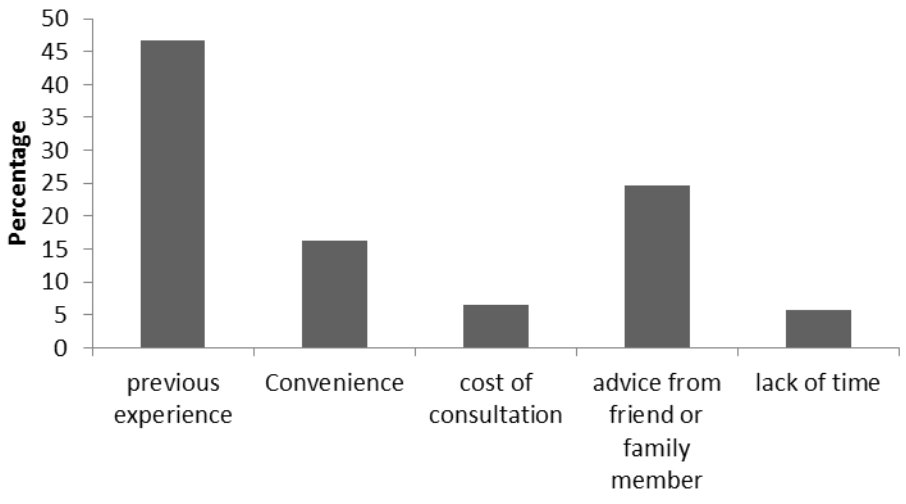

Figure 4: Factors that led to these students' self-medication of analgesics

Assessment of Knowledge on Analgesics

To assess each student's knowledge of analgesics, a set of seven (7) questions were asked with the option of picking a single answer. Each correct answer is given a score of one. The grade categories of 0-3, 4, 5-7 are poor, fair and good respectively.

The question with the highest percentage of correct response was the painkiller most likely to cause addiction (59.6%) (Table 6). Ninety two percent (92%) of the students had poor score category (Table 7).

There was no significant association between gender and the score categories (F = 4.560 P >0.05). Also, the level of study did not influence the score category as there was no significant difference (F = 12.717 P >0.05).

Table 6: The number of students (n) who selected the correct answers from the seven knowledge-based questions

Questions	**Correct Response** n	%
Which do you think contains paracetamol?	20	5.47
At what age is it appropriate to take aspirin when needed?	45	11.7

Which painkiller do you think reduces swelling?	51	13.33
Which of the painkillers do you think is associated with a small risk of heart disease/ stroke?	20	5.2
In what condition is ibuprofen not normally appropriate?	84	21.9
Which painkiller is most likely to cause addiction?	229	59.6
When you feel the need to take painkillers while you are on other regular medications, what do you do?	154	40.1

Table 7: Student's Score Category in Relation to their Gender and Class Level

Total (n =384)	**Score Category**			
	Poor	**Fair**	**Good**	***P* value**

	(n = 353)	(n = 24)	(n = 7)	
Gender				0.695 X= 4.560
Male	177	16	1	
Female	176	8	6	
Level of Study				
100	55	3	0	
200	155	9	1	0.068
300	84	3	3	F= 12.717
400	50	8	1	
500	10	0	2	

DISCUSSION

This study investigated the knowledge of analgesics and analgesic-taking habits of non-medical students of the University of Lagos. The results showed that out of the 384 students who filled the questionnaires, 315 (82%) use analgesics. Although, more females were seen to use analgesics, the difference between male and female usage is not statistically significant (X^2, P=0.112). This study agrees to some extent with the study conducted among Aston University, UK students[10], where more females were reported to use analgesics.

Also, in this study, about one-third of students were found to be chronic users of analgesics. Most of them indicated severe headache to be the reason for their "chronic use" of the analgesics. This concurs with the result from the study of Iranian students in Qom city where headache was seen to be the most prevalent condition requiring analgesic usage[9]. Another study on self-medication with analgesics among medical students and interns in King

Abdulaziz University, Jeddah, Saudi Arabia affirms that many students self-medicate on analgesics for pain and headaches[11].

This could be attributed to the stress and tension University students are often predisposed to all through the session. Headaches often result from traction or irritation of the meninges and blood vessels. Blood vessel spasms, dilated blood vessels, inflammation and/or infection of meninges and muscular tension can also stimulate nociceptors and cause pain. Apart from the use of drugs such as analgesics to relieve headache, other non-pharmacological means like having a good rest, aerobic exercise, sleep regulation could help.

It takes about 1-2 weeks before most students consult a doctor for medical check-up in situations where their symptoms persisted after self-medicating with analgesics.

Moreover, it was observed in this study that paracetamol was the most used analgesic by students and followed by ibuprofen. This compares well with the result of the study on analgesic use among Aston University students[10]. This is also nearly similar to the results obtained in Agba *et al* study and the study on pharmacy students in Lahore, Pakistan where paracetamol was the most preferred analgesic by 58.1% and 38.7% respectively [6,12.]

Paracetamol remains a better option than non-steroidal anti-inflammatory drugs (NSAIDs) for most patients requiring over-the-counter analgesics. Paracetamol is an effective analgesic, it is the first line treatment of pain and pyrexia, it also plays an important role in multimodal analgesia[13, 14]. Despite its safety profile, acute overdose of paracetamol may cause liver damage and potentially fatal kidney and brain damage.

Ibuprofen is a non-steroidal anti-inflammatory drug (NSAID) used for relieving pain, helping with fever and reducing inflammation[15]. Compared to other NSAIDS, ibuprofen may have fewer side-effects such as gastrointestinal bleeding, given at low doses, it does not increase

the risk of myocardial infarction but at high doses it may increase the risk and it may also cause worsened asthma[16].

Further into this study, it was noted that the primary reason students self-medicate on analgesics is due to their previous experiences of similar conditions. A small number of the students said that they used Procold® (paracetamol, pseudoephedrine & chlorpheniramine 500mg/30mg/2mg) as an analgesic, this indicates the poor knowledge some students have about this brand of drug, although, Procold® contains paracetamol, the amount present therein (500mg) is not the optimal for a single dose of paracetamol to be taken to cause relief of pain. We can also say that brand name of drugs influence the choice of drugs to self-medicate by students[10, 12, 17].

An important finding of this study was that 92% of non-medical students of University of Lagos do not have adequate knowledge of analgesics as evident from the questions provided to assess their level of knowledge on analgesics. The only question that had the greatest number or percentage of correct answers was the question on what analgesic causes addiction- codeine.

This study reveals a dangerous duo of paucity of knowledge of analgesics among the non-medical undergraduates of University of Lagos and high level of self-medication. This usually results into analgesics misuse and abuse. It eventually exposes students to untoward effects of these drugs and could compromise their health. Universities are bastions of knowledge, a well-coordinated programme on our campuses to educate our students about dangers of abuse and misuse of drugs in general would not only stem the tide, but also create channels to disseminate the information into the communities outside and the nation at large.

CONCLUSION

We observed that paracetamol remains the most self-medicated or abused analgesic among undergraduate non-medical students primarily for headache. There was no difference in use habits between both genders. Most of our respondents do not have adequate knowledge on non-narcotic analgesics. Measures to educate students on appropriate use of analgesics and other drugs should be put in place by our Universities.

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