PERCEPTION AND PRACTICE OF SELF-MEDICATION WITH OVER-THE-COUNTER ANALGESICS AMONG STUDENTS OF A TERTIARY INSTITUTION

Muhammed Sani Ibrahim[1], Aisha Gloria Bala[2], Aisha A. Abubakar[1]

[1]Department of Community Medicine, Ahmadu Bello University, Zaria
[2]Faculty of Medicine, Ahmadu Bello University, Zaria

ABSTRACT

BACKGROUND: Although over-the-counter (OTC) analgesics increase access to and ease of medication, they are a major contributor to irrational use of medicines worldwide. This study assessed perception and practice of self-medication with OTC analgesics among students of Federal College of Education, Zaria.

METHOD: It was a cross-sectional studyof200 students. Data was collected using a self-administered questionnaire. Descriptive statistics were computed, and Chi-square test was used to test association between practice of self-medication and other categorical variables.

RESULTS: Seventy-six (38.8%) had good knowledge of OTC analgesics and 187 (95.4%) had good perception. Majority 151 (77.0%) had taken at least one OTC analgesic in the last three months. The most common reason for taking OTC analgesics was their easy availability66 (43.7%), and the most common symptom treated was headache 80 (53.0%). Self-medication with OTC analgesics was significantly associated with age ($p = 0.010$) and level of study ($p = 0.001$), but not with sex ($p = 0.866$), ethnicity ($p = 0.416$) or marital status ($p = 0.104$).

CONCLUSION: Knowledge of OTC analgesics was poor, perception was largely positive, while self-medication was a common practice. Major factors influencing self-medication were age and level of education. It is recommended that efforts to control excessive self-medication with OTC analgesics should focus on creating public awareness and restricting the sale of OTC analgesics to licensed dealers.

KEYWORDS: Self-Medication, Over-The-Counter, Analgesics, Students

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INTRODUCTION

Over-the-counter (OTC) drugs are drugs that are legally allowed to be sold without aprescription, mostly employed in the treatment of simple ailments like aches and pains, cough and cold, fever, allergy, and skin disorders.[1] In recent years, the trend in self-medication with OTC analgesics has increased. For example, a survey of medication use patterns in the United States reported that more than 80% of American adults used at least one OTC analgesic each week, and that 25% of them used at least five drugs.[2] Although self-medication increases access to and ease of medication, it is a major contributor to irrational use of medicines worldwide.[3]

OTC analgesics, are generally effective in the management of mild to moderate pain and offer certain patient-centred advantages as they are usually of low cost, with doses readily available on demand. However, because they are considered as low-risk compared to prescription-only medications, they are prone to abuse or misuse.[4] This may explain why OTC analgesics such as paracetamol and ibuprofen, that help individuals to self-manage symptoms may be abused, with addiction and harm being increasingly observed.[5,6] But inappropriate use of these drugs are associated with risks of medical complications and adverse drug interactions.[7] In addition, their adverse effects are worse in some certain patients than in others.[8]

Low level of awareness combines with poor access to health care to increase the use of OTC analgesics.[9] Certain situations such as high job demand and academic burden also act as compelling factors to use of OTC analgesic.[6] In addition, age, sex, income, level of education, medical knowledge, previous experience with the same or similar discomforts, attitude about one's own health, and professional status have been reported to predispose to this practice.[10]

Corresponding Author: Muhammed Sani Ibrahim
Department of Community Medicine
Ahmadu Bello University, Zaria
Email: firstmsibrahim@yahoo.com

This study was done to assess knowledge, perception and practice of self-medication with oral OTC analgesics among students of Federal College of Education, Zaria.

METHODOLOGY

The study was conducted among students of Federal College of Education, Zaria, Nigeria. The college has seven schools, and 33 departments that offer various courses of study. The regular programmes run by the college are various undergraduate degree programmes and the Nigerian Certificate in Education (NCE), an A-level grade course for secondary school leavers. The college has a counselling unit that counsels on career, mental health and other related issues, and a school clinic manned by two doctors, five nurses and two pharmacists to provide general service for 24 hours every day of the week. There were 14,427 students (11,489 NCE and 2,938 undergraduate students) with only about one-tenth accommodated within the school hostels.

The study employed a cross-sectional design conducted among 200 full-time students. The minimum sample size required for the study was estimated as 73 by taking the proportion of outcome of interest from a previous study as 5%,[11] standard normal deviate of 1.96 at 95% confidence interval, and a margin of error of 5%. Respondents were selected through a multi-stage sampling technique. In the first stage (selection of schools), balloting was used to select five out of the seven schools; Schools of Science, Languages, Vocation and Technical Education, Education, Arts and Social sciences. In the second stage (selection of departments), balloting was used to select two departments from each of the selected schools, making a total of 10 departments. In the third stage (selection of respondents), balloting was used to select 20 students from a list of all students in the respective departments; eight from the N.C.E category and twelve from the undergraduate. Hence, a total of 200 students were selected and studied.

Data was collected using a structured self-administered questionnaire containing both open- and closed-ended questions designed by the researchers, and pretested among students of Ahmadu Bello University, Samaru Campus. It had four sections focused on the socio-demographic characteristics, knowledge of OTC analgesics, perception of self-medication with OTC analgesics, and self-medication with OTC analgesics. The data was analyzed using IBM SPSS Statistics version 21. Mean, standard deviation, frequency and percent were calculated. Chi-square test was used to assess the association between practice of self-medication with OTC analgesics and other categorical variables at $p < 0.05$.

Five questions were asked to assess knowledge, each correct answer scored one point and wrong answer scored zero. A score of four or five was regarded as good knowledge and less than four was regarded as poor knowledge. Similarly, six questions were asked to assess perception of self-medication with OTC analgesics, with a maximum score of six and minimum score of zero. Here, an individual was regarded to have good perception if he got a score between three and six and poor perception if he got a score of two or less. A student was taken to have engaged in self-medication with OTC analgesics if he reported that he used any of the listed OTC analgesics in the last three months.

RESULTS

A total of 196 out of 200 questionnaires were successfully administered, giving a response rate of 98.0%. Majority 131 (66.8%) of the students were between 20 and 29 years with a mean age of 23.6±6.3 years. Majority 111 (56.6%) of them were males, Hausa 111 (56.6), and single 144 (73.5%) (Table 1). Seventy-six (38.8%) had good knowledge of OTC analgesics and 187 (95.4%) had a good perception.

Majority 151 (77.0%) had taken OTC analgesics in the last three months, and 79 (52.3%) of these had combined at least two OTC analgesics containing the same active ingredient but having different trade names. The most commonly used OTC analgesic was paracetamol 97 (64.2%), while the least used was diclofenac 12 (7.9%). The most frequent reason for self-medication with OTC analgesics was easy availability 66 (43.7%), followed by "seeing a doctor required too much time" or "to save time" 64 (42.4%) (Table 2). The most common symptoms treated with OTC analgesics were headache 80 (53.0%) and body pains 36 (23.8%), while the least were cough 4 (2.6%) and poor sleep 3 (2.0%) (Figure 1).

Self-medication with OTC analgesics showed a statistically significant association with age ($p = 0.010$) and level of study ($p = 0.001$). However, it was not associated with sex ($p = 0.866$), ethnicity ($p = 0.416$) and marital status ($p = 0.104$) (Table 3).

Table 1: Socio-demographic characteristics of students studied

Socio-demography	Frequency	%
Age in years		
15 - 19	39	19.9
20 - 24	101	51.5
25 - 29	30	15.3
30 - 34	15	7.7
35 - 39	3	1.5
40 - 44	2	1.0
45 - 49	6	3.1
Ethnicity		
Hausa	111	56.6
Yoruba	42	21.4
Igbo	27	13.8
Others	16	8.2
Marital status		
Single	144	73.5
Married	46	23.5
Divorced	3	1.5
Separated	3	1.5
Level of study		
NCE*	106	54.0
Bachelor's degree	90	46.0
TOTAL	**196**	**100.0**

*NCE = Nigerian Certificate in Education.

Table 2: Over-the-counter analgesics taken and reasons for taking them among students who took them

Variable	Frequency	%
OTC Analgesics Taken		
Paracetamol	97	64.2
Ibuprofen	42	27.9
Diclofenac	12	7.9
Piroxicam	-	-
Reasons For Taking OTC Analgesics		
Seeing a doctor takes too long/to save time	64	42.4
Easily available	66	43.7
Pain not severe enough to visit hospital	61	40.4
They are safe	60	39.7
They are cheap	38	25.2
Total	**151**	**100.0**

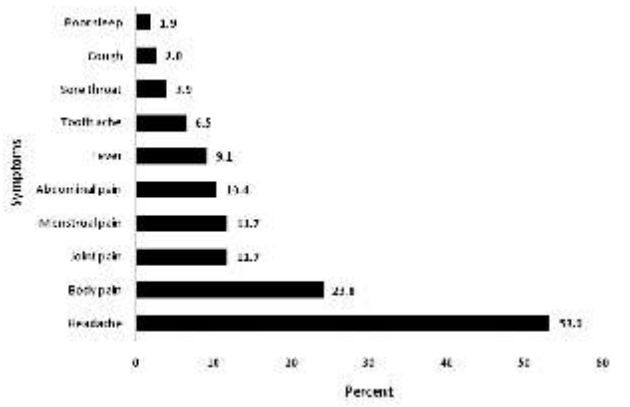

Figure 1: Symptoms treated with over-the-counter analgesics among students who took them (N=151)

Table 3: Use of OTC analgesics by socio-demographic characteristics of students studied (n=196)

Socio-demographics	Use of OTC analgesics n (%)			p-value
	Yes	No	Total	
Age in years				
15-24	100 (71.4)	40 (28.6%)	140 (100.0)	
25-34	40 (88.9)	5 (11.1)	45 (100.0)	0.010
>35	11 (100.0)	0 (0.0)	11 (100.0)	
Sex				
Male	85 (76.6)	26 (23.4)	111 (100.0)	0.866
Female	66 (77.6)	19 (22.4)	85 (100.0)	
Ethnicity				
Hausa	84 (75.7)	27 (24.3)	111 (100.0)	
Yoruba	3.2 (76.2)	10 (23.8)	42 (100.0)	0.416
Igbo	24 (88.9)	3 (11.1)	27 (100.0)	
Others	11 (68.8)	5 (31.3)	16 (100.0)	
Marital status				
Single	105 (72.9)	39 (27.1)	144 (100.0)	
Married	40 (87.0)	6 (13.0)	46 (100.0)	0.104
Divorced	3 (100.0)	0 (0.0)	3 (100.0)	
Separated	3 (100.0)	0 (0.0)	3 (100.0)	
Level of study				
NCE	72 (67.9)	34 (32.1)	106 (100.0)	0.001
Undergraduate	79 (87.8)	11 (12.2)	90 (100.0)	

DISCUSSION

This study determined that, although perception of self-medication with OTC analgesics was largely positive, the knowledge of OTC analgesics was poor, while the prevalence of self-medication with OTC analgesics was high. The major factors that influenced use of OTC analgesics were age and level of education. Knowledge and perception of OTC analgesics did not appear to influence their use.

Only a little above one-third of the respondents had good knowledge of OTC analgesics, their administration and side effects, but majority knew that overuse of OTC analgesics could result in serious complications. Despite this, many of the students still said more tablets than usual of an OTC analgesic could be taken if pain is very severe. This finding is similar to that of a study conducted among undergraduate students in University of Jos, where about one-third of the respondents had good knowledge of self-medication with OTC analgesics.[12] However, it is higher than that of a study in Saudi Arabia where only 6.7% of the students of tertiary institutions had good knowledge of OTC drugs.[6]

Use of medicines is safest when information about medicines is obtained from reliable sources.[13, 14] In this study, the major sources of information on OTC analgesics are friends and the internet. The use of internet by young persons to source information on OTC analgesics has been reported in previous studies.[15,16] Thus, the internet could be exploited to create awareness on OTC analgesics among such students, especially on the regular use of leaflets to check information on the benefits, risks and doses of these drugs. In addition, pharmacists should always inform individuals procuring OTC analgesics from them about the need to always explore the medicine leaflet or instructions on the package before use.

Positive perception of self-medication with OTC analgesics was observed in majority of respondents, and majority knew that OTC analgesics were not necessarily safer than prescription analgesics. This is similar to the finding of a study conducted in India, where majority of the respondents had good perception on safety and potency of OTC analgesics.[2] However, it is in contrast with the finding of a study conducted among rural dwellers in Kwara State, Nigeria, in which most believed that the efficacy of any analgesic would increase with increase in the number of tablets.[17] This disparity may be due to limited access to reliable sources of health information among the rural dwellers, which could have resulted in sourcing of information from friends or relatives which is not necessarily.[18] In addition, high literacy levels among students as compared to rural dwellers puts them in a better position to read and understand information provided in package inserts which are generally more reliable.[19] Also, rural dwellers are more likely, especially due to lack of mechanisation, to engage in intensive physical activities which may predispose them to excessive or repeateduse of OTC analgesics.[17]

The prevalence of 77.0% for use of OTC analgesicsis similar to the 79.8% observed in Nsukka, Nigeria.[20] It is, however, difficult to compare both findings because the Nsukka study did not specify the time frame it used to assess use of OTC analgesics. However, the symptoms of headache and body pain accounting for most of the use of OTC analgesics are similar between both studies. These finding is also similar to the one from a study in Bahraini,[18] higher than those from Norway and Germany.[21,22] This difference from the findings in Norway and Germany may be accounted for by the fact that while this study referred to the last three months, the one in Norway referred to only last one month and the one in Germany to only last one week. In this study the main reasons for opting to use OTC analgesics are the desire to save time because seeing a doctor was said to take too long, OTC analgesics were easily available, and the symptoms experienced were not severe enough to make them go to a hospital. The same reasons have been reported previously.[9] The most commonly used OTC analgesic was paracetamol. This is similar to the findings in Nsukka, Nigeria and Norway[20,21] but different from the one from Germany where ibuprofen was the most commonly used.[22]

The use of OTC analgesics was found to decrease with age. This is similar to a finding from Saudi Arabia, where a gradual decline in use of OTC analgesics was observed with advancing age.[6] It is expected, however, as reported by Builders et al in Enugu State, Nigeria that the use of analgesics increases with age because of the tendency for increased frequency of painful conditions with advancement in age.[23] Furthermore, the association between age and use of OTC analgesics may be explained by the increasing knowledge on safety concerns on OTC analgesics with advanced age.[24]

There was also a statistically significant relationship between level of study and use of OTC analgesics; an increase in use with increased level of study similar to the finding in a study in Serbia, where students in higher levels self-medicated with OTC analgesics more than those in lower levels.[25] This, however, is unexpected considering the assertion that younger persons are more likely to abuse drugs.

The study has a few limitations. Some respondents might not have accurately recalled past events surrounding their self-medication. Effort was made to reduce this possibility by asking questions using common trade names in all aspects possible. In addition, some respondents might have deliberately given misleading responses concerning their use of drugs, for fear of being accused of committing drug abuse. This could not have been independently verified.

Overall, it suggests that an important strategy for reducing excessive and wrongful consumption of OTC analgesics is to reduce their availability. This could be through the restriction of their sale to licenced drug dealers. Also, health care professionals must seize every opportunity to sufficiently educate patients about the correct indications, dosages, treatment duration, side effects and contraindications to use of OTC analgesics. Finally, efforts should be made to improve knowledge of OTC medications among students through public campaigns, to ensure appropriate self-medication practices and better understanding of safety concerns. Considering that students are a literate sub-population, such campaigns should also enlighten them on the need to read and adhere to instructions in package inserts. Because most of the students in this study sought information on OTC analgesics through the internet, the internet could be used to promote the reading of leaflets among students and young persons in general. Finally efforts should be channelled towards reducing patient waiting time at the institution's clinic to increase the likelihood of students opting to consult health workers at the clinic. This should offer them the opportunity to receive information about OTC analgesics from reliable sources; the health workers

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