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Pharmacist's Knowledge and Practice of Adverse Effects of Common Analgesics in Suru-Lere, Lagos State, Nigeria

O. A. Olugbake[1] O. C. Adeyemi[1] O. C. Ogbonna[1]
Department of Clinical Pharmacy and Biopharmacy, Faculty of Pharmacy, University of Lagos

ABSTRACT

The use of analgesics is a worldwide occurrence for a variety of ailments. They are readily available and relatively safe but sometimes adverse effects occur. Pharmacists dispensing these medicines should know and mention these adverse effects. The aim of study was to assess the pharmacists' knowledge and practice about side effects of commonly recommended analgesics. A cross-sectional survey among community pharmacists was carried out using questionnaires to elicit knowledge of side effects and practice when handling commonly prescribed analgesics in Surulere, Lagos, Nigeria. Pharmacists reported paracetamol, diclofenac and ibuprofen as the most frequently dispensed analgesics but did not sufficiently ask patients about their experience of adverse events or provide counselling consistently. Less than two-thirds of respondents queried patients for disease conditions during dispensing and less than half inquired about other drugs being used by the patient. About a third documented information and medication histories to monitor drug interactions and possible side effects. Barriers to providing adequate information to patients were level of education, and lack of time. Many pharmacists are aware of the potential side effects of analgesics but a number of conditions hinder their communication of these effect to the patients who buy these medications.

Key words: Analgesics, NSAIDs, Pharmacists, adverse effects

INTRODUCTION

The use of analgesics is a worldwide occurrence for a variety of ailments from headache and the common cold to dental pain. The most common analgesics available for over the counter use (OTC) use are paracetamol and some non-steroidal anti-inflammatory drugs (NSAIDs).

Non-steroidal anti-inflammatory drugs (NSAIDs) are drugs with analgesic, antipyretic and anti-inflammatory effects and are among the most frequently prescribed drugs as well as one of the most widely used classes of drugs in modern medicine (Wallace and Vong, 2008, Meek *et al*., 2010, Jande *et al*., 2013). The use of analgesics has been associated with headaches, physical work stress, poor physical fitness and perceived poor health and they are seen as being readily available to reduce inflammation and temperature as well as alleviate pain whether chronic or acute (Akoria *et al*., 2005, Awofisayo *et al*., 2008). In Nigeria, analgesics can be readily obtained with or without prescription (Zafar *et al*., 2008) thereby encouraging self-medication practices. Studies have also shown that self-medication practices are more common in women, students, those of younger age, those who live alone, have a lower socioeconomic status, have more chronic ailments and have psychiatric conditions (Zafar *et al.*, 2008, Haseeb and Bilal, 2016). Community pharmacists have been recognized to be the health professional most accessible to the public as well as being the first point of contact for the patient as they are well situated in the neighbourhood (WHO, 1994, Eades *et al*., 2011). Analgesics which are considered relatively safe are readily obtainable from pharmacies and other places for short term use without a doctor's prescription (Habeeb *et al*., 2012). The safety of these analgesics is relative as they are known to have adverse effects such as gastrointestinal tract effects (nausea and vomiting, dyspepsia, gastric ulceration/bleeding, diarrhoea), renal and hepatic effects (Wallace and Vong, 2008). These adverse effects may not be known or easily recognisable as such thereby causing anxiety or use of other medication to alleviate some of these conditions. Even though these effects may be low in incidence, being mostly mild clinical effects with prompt resolution with cessation of use, they may not be entirely predictable. To ensure these adverse effects do not impact negatively on the patient's quality of life, pharmacists should provide drug information during patient counselling to ensure qualitative use of these analgesics.

Corresponding Author: o.olugbake@unilag.edu.ng; oga1063@gmail.com Phone: +2348023142929

The pharmacist provided patient counselling involves giving the patient medication related information orally or in written form on topics like direction of use, advice on side effects, precautions, storage, diet and life style modifications has been identified as one of the key functions of the pharmacist and is an important means for achieving optimal benefit from medicines with minimal experience of adverse effects. For pharmacist to give out effective information, they should have the knowledge themselves. This study assessed the pharmacists' knowledge and practice about side effects of commonly recommended analgesics.

MATERIALS AND METHODS

The cross-sectional survey was carried out among community pharmacists practicing in Surulere LGA of Lagos state, Nigeria. Surulere was conveniently chosen as it had over fifty registered retail pharmacies. The sampling frame was obtained from the Pharmacist Council of Nigeria's published list of registered pharmacies in Nigeria. Thirty pharmacies were randomly selected by picking names on strips of paper from a basket that had all registered community pharmacies in Surulere, Lagos, Nigeria. The questionnaire was given to at least two (2) pharmacists who consented to the survey in each location.

The structured questionnaire used in this survey was developed by the researchers to assess the community pharmacist's knowledge of three commonly used NSAIDs and paracetamol. The questionnaire also elicited self-reported information given to patients and self-reported barriers to providing adequate information/counseling. The knowledge of side effects from the use of ibuprofen, diclofenac and piroxicam, as well as paracetamol were assessed by choosing 4 commonly observed side effects from the British National Formulary. Each side effect recognized was given a score of one (1), thus each drug had a total score of 4, and the 4 drugs a total score of 16. Respondents provided information on other areas of the questionnaire with the aid of a likert scale with a scale of five responses (never -1, rarely-2, sometimes -3, often 4, always -5 and strongly agree -5, agree-4, neutral -3, disagree -2, strongly disagree-1).

Collected data was analyzed with Statistical Package for Social Sciences (SPSS) Version 17.0

RESULTS

A hundred pharmacists took part in the study. There were more female respondents in this study than males (13:5). And a majority of the respondents were employees (82%) compared to 18% who were Pharmacy owners. Mean number of years of Community Pharmacy experience possessed by the respondents was 4.86 years (Range: 1 to 24 years); most of the respondents (70%) did not have more than five years of retail Pharmacy experience, 28% had between six and ten years of retail Pharmacy experience with a minor 2% having greater than ten years of retail experience. Only a few (16%) had a post-graduate qualification. Respondents reported diclofenac and ibuprofen as the most frequently dispensed NSAID (98%) followed by piroxicam (86%). All the pharmacists said they recommended paracetamol and NSAIDs at one time or another and for a variety of ailments (aches and pains- 72%; arthritis- 38%, dysmenorrhea – 30%, fever and toothache – 22%). Most of the respondents (76%) rarely came across patients with any side effects to report from use of NSAIDs. At least 60% of the respondents were able to correctly identify one or more of the side effects listed for each of the named medicines. However, the respondents showed best knowledge of the side effects listed for diclofenac and paracetamol, as 80% of respondents correctly identified at least one side effect listed. Respondents in the study did not sufficiently ask patients about their experience of adverse events- less than 40% of respondents provided counselling for analgesic users consistently. Less than 60% of respondents queried patients about disease conditions during dispensing and less than half inquired about other drugs being used by the patient. Only 27% of the pharmacists documented information and medication histories to monitor drug interactions and possible side effects (Table 1). From the study, eighty percent (80%) of the pharmacists only asked questions concerning side effects experienced by patients only when they felt that there was a need to, while 12% said that there was not usually enough time due to the number of patients to attend to.

The pharmacists strongly agreed/agreed that the barriers to providing adequate information to patients were level of education (64%), lack of time (60%), lack of privacy (56%), language barrier (52%) and lack of knowledge by the pharmacist (40%) (Table 2). In the sample studied, pharmacy owners were more likely than pharmacist employees ($p< 0.05$) to identify patients' level of education and lack of private counselling area as a barrier to communication when recommending NSAIDs. The level of education of the pharmacist appeared to also make a difference in their perception of the barriers to patient care in NSAIDs use too.

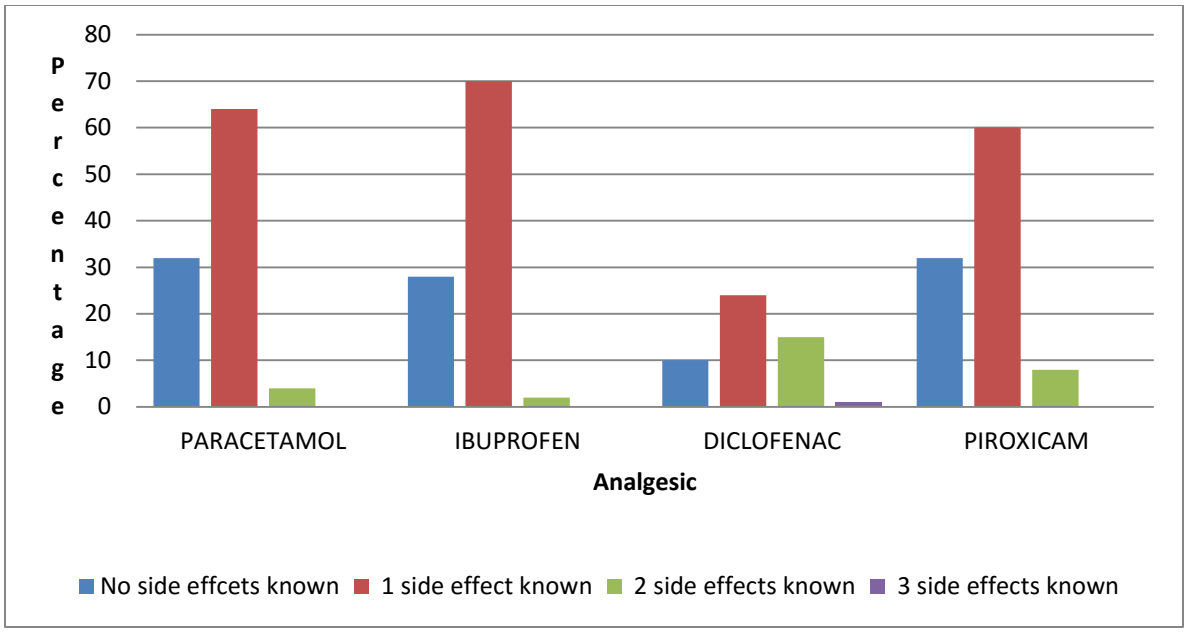

Figure 1: Pharmacists' Knowledge of Side Effects

Table 1: Counselling Information given to Patients

SELF REPORTED INFORMATION PROVIDED TO PATIENTS DURING COUNSELLING FOR NSAIDS USE	Never (%)	Rarely (%)	Sometimes (%)	Often (%) YES	Always (%)
How often do you provide information on side effects of drugs to patients			38	32	30
How often do you provide counselling on the side effects of NSAID drugs to patients when selling or recommending?		2	26	38	34
Do you ask patients questions concerning their health when selling or recommending NSAIDs		2	12	28	58
Do you ask patients questions concerning the medications they are using when selling or recommending NSAIDs?	2	4	24	24	46
Do you document patients' information and history to monitor drug interactions and possible side effects?	24	22	40	10	4

Table 2: Barriers in Providing Adequate Information/Counselling

Questions	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Language is a barrier	6	46	26	18	4
Patients level of education affects	20	44	18	14	4
There is not enough time	12	48	26	12	2
Lack of privacy can affect	8	48	22	20	2
Pharmacists do not have enough knowledge	2	38	10	38	12

Pharmacists with a postgraduate degree were able to identify more barriers to care for the patient (such as language, lack of private counselling area, insufficient time to address patient concerns and

knowledge of side effects of NSAIDs by pharmacist) than those without a postgraduate degree ($p<0.005$).

DISCUSSION

The respondents identified paracetamol, diclofenac and Ibuprofen as the most commonly recommended analgesics in Surulere. This does not agree with what Awodele *et al*. (2015) whose report showed that aspirin was the most frequently prescribed NSAID in Lagos University Teaching Hospital located in Surulere area of Lagos state. Aspirin is mainly prescribed as antiplatelet and cardioprotective judging from the co-prescription with other antihypertensives in the study (Awodele *et al*., 2015).

Most of the respondents in this study correctly identified at least one side effect for all the listed NSAIDs, this shows pharmacists are able to provide required information for patients during counselling for NSAID use. Respondents did however identify more side effects for Diclofenac than other pain reliever listed. This may be due to higher analgesic effect of diclofenac, ultimately leading to more recommendations by the pharmacist which may allow the provider to be more conversant with its side effects (Ong *et al*., 2007). This reported higher knowledge of side effects of diclofenac may also be due to its reported higher risk for GIT toxicity compared to other listed NSAIDs (Henry *et al*., 1996, MacDonald *et al*., 1997, Garcia Rodriguez *et al*., 1998, Ong *et al*., 2007).

Self-reported practice of participating pharmacists in this study showed that all provided information to patients on side effects of drugs in general, even though it was not done consistently. And the number of those who in turn provided side effect counselling for patients using an NSAID was similar. This will result into missed opportunities for pharmacist delivered NSAID counselling and variable results experienced by patients using the drugs. A lack of standard guidelines for information provided by pharmacists to patients may be the reason for these largely variable results (Yang *et al*., 2016). NSAIDs contribution to risk of gastrointestinal, renal and cardiovascular complications is well documented in the literature, this makes it important for the pharmacist to inquire about the patient's medical condition during patient counselling, but this is not being adequately carried out by the respondents in this study.

Most of the respondents also seemed to recognize the importance of contraindications as most of the respondents made an effort to identify contraindications all the time during an encounter with patients. This was also noticed with the effort at preventing drug-drug contraindications, as the respondents also largely reported doing this.

In this study, only half of the respondents reported at least documenting patient information in order to monitor drug interactions and any adverse events. This is rather low but cannot be divorced from the low rate of general documentation practice among pharmacists in Nigeria reported in a recent study (Suleiman *et al*., 2012). Similarly, only about half of the respondents in the study by Suleiman *et al*. (2012) also reported doing any documentation of patient information collected as part of pharmaceutical care.

More than half of the respondents identified language barrier as an important impediment to the consistent, adequate provision of NSAID information and counselling to the patients. Nigeria is a multi-lingual state with more than 250 local languages, and English as the official state language. Specifically in Lagos, Established evidence suggests that majority of Lagosians are literate in English as reported by the Lagos State Literacy Survey. The survey reports that 90% of residents in Surulere, Lagos who are 5years old and older are able to read and write in English (Lagos State Agency for Mass Education, 2011). Formal education however is not functional health literacy, but both are positively correlated (Howard *et al*., 2006, Lee *et al*., 2010). The finding in this study is however supported by other studies where pharmacists identified language as a significant barrier to patient counselling (Koster *et al*., 2016, El Hajj *et al*., 2016).

The majority of respondents identified patient's education level as a significant barrier to providing NSAID information and counselling. The Lagos State Literacy Survey reports that in Surulere, formal education prevalence was at 72%. This means that the average resident in Surulere can read at least at a primary school leavers' level. However since it is known that patients with low education levels may have poorer health outcomes, community pharmacists may be inter-phasing most of the time with residents who have little or no formal education (Lee *et al*., 2010). This may be the reason why this was the barrier pharmacists identified with the most using the strongest term on the likert scale. This is also in agreement with findings in other studies where pharmacists identified barriers to provision of counselling and drug information (Albekairy, 2014, El Hajj *et al*., 2016, Koster *et al*., 2016, Yang *et al*., 2016).

Pharmacists in Surulere also identified time constraints as another barrier to providing adequate information and counselling. Perceived time constraint barriers may be related to the pharmacists' proficiency in managing time and performing their tasks, patients' impatience at the pharmacy, or

organization related factors like pharmacist work load.

Respondents were of the opinion that the absence of a dedicated space for counselling will be a barrier to counselling. In many studies, the presence of a dedicated space for counselling has been associated with improved perceived patient privacy. Hattingh *et al*. (2016) described how patients' perception of privacy may be improved in the absence of such spaces including taking patients to a quieter part of the pharmacy, avoiding exposure of sensitive items through packaging, lowering of voices, interacting during pharmacy quiet times and telephoning consumers.

Finally, almost half of respondents identified the lack of sufficient knowledge of the side effects as a barrier to provision of counselling to patients. This study showed a high proportion of pharmacists agreeing that 'Pharmacists not having enough knowledge' may be one of the challenges with providing related counselling to patients, this may point to a feeling of inadequacy or an actual lack of knowledge required to provide the counselling to patients. This opinion did not change with years of experience or between owner- and employee-pharmacists.

Significantly, respondents who owned their Pharmacy and pharmacists with postgraduate qualification were able to identify significant barriers to communication and patient care more than employee-pharmacists. Healthcare personnel must be aware that a barrier to communication with the patient exists in their practice before they can implement any methods to overcoming interpersonal/ institutional or environmental barriers to communication. Differences in type of postgraduate certifications were not explored in this study.

CONCLUSION

This study identified that pharmacists are able to identify side effects of analgesics correctly, especially the side effects associated with diclofenac. Respondents also identified important barriers that impact on the pharmacist's ability to provide side effect counselling during patient encounters.

Paracetamol, diclofenac and ibuprofen were reported as the most commonly recommended analgesics by pharmacists. This study identified that majority of pharmacists do not consistently provide the appropriate medicine information needed by patients to identify the side effects of medicines.

LIMITATION

The results of this study may not be generalizable but is representative of the sample- pharmacists within Surulere area of Lagos State, at the time of the survey.

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