

Evaluation of Analgesics Usage in Pain Management among Primary Care Physicians in Nigeria

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ABSTRACT

Introduction: Pain is among the most common reasons patients seek medical attention. This study was therefore designed to evaluate the pattern of pain management among family medicine residents in Nigeria.

Method: This was a descriptive cross sectional survey conducted among family medicine residents with the aid of pre-tested self administered structured questionnaire.

Results: Out of the 300 residents recruited, 250 (83.3%) participated in the survey. The most common reason for the treatment of pain by the residents was enhancement of well being (211; 84.4%). The major factors that guided the residents in their choice of analgesics include severity of pain(150; 60.00%), potency(150; 60.00%) and cost (125; 50.00%). Hospital policy did not feature prominently as a factor (15; 6.0%). The drug most commonly prescribed were paracetamol (123;49.20%) and non steroidal anti inflammatory drugs (NSAID) (76; 30.40%). The opioids were not commonly prescribed. Multimodal analgesia was practiced by 42 (16.80%) of the residents.

Conclusion: The study demonstrated that the commonest factors influencing the choice of analgesic include severity of pain, potency of the drug and cost of drugs. The most commonly prescribed analgesics were paracetamol and NSAIDs. Opioids such as morphine and pethidine were not commonly prescribed. Multimodal analgesia was practiced by a minority of the residents.

Keywords: Analgesic usage, primary care physicians

INTRODUCTION

Pain is among the most common reasons patients seek medical attention, accounting for more than 50% consultation in primary care¹ and about 70% of patients who present at emergency departments.² Although unrelieved pain exerts negative influences on the physical and mental health, social and intimate relations, sleep and daily tasks performance, work productivity and financial well being,³ it is integral to life; a critical component of the body's natural defense system, signaling threats to body integrity and provoking self-preservation behaviors to further survival.⁴ Inadequate pain management predisposes to patient dissatisfaction with health care services⁵ and chronic pain, which itself a societal burden.⁶ Despite global recognition of the wide-spread prevalence of pain and enormous resources spent to provide effective pain management, some researchers continue to show the prevalence of poorly treated pain.⁷

Such high pain prevalence seems to be due to lack of adequate attention to pain, lack of education of health professionals, as well as some barriers to the use of opioids.⁸ Pain control is therefore an essential service and duty of clinicians, and the appropriate selection and use of analgesics will facilitate the delivery of this service with the optimal safety and efficacy.⁹ Patients with pain seen by primary care physicians include those associated with non-surgical conditions such as headache, burns, herpes zoster, neurological diseases, haematological disorders(e.g sickle cell disease) and HIV/AIDS, as well as abdominal (e.g. renal and biliary colic), musculoskeletal and orofacial pain.⁷

In a survey on doctors' knowledge and attitude of treating chronic pain in three tertiary hospitals in Nigeria, only 9.5% of doctors use opioids for chronic pain compared to 73% who use Nonsteroidal anti-inflammatory drugs

(NSAIDs). Few doctors (23%) use two or more drugs to treat chronic pain.¹⁰ In another survey among dentists in Nigeria, the most common prescribed analgesic was paracetamol 54 (39.1%).¹¹ Factors that influenced the choice of prescribed analgesics among them in descending order were severity of pain or intended pain, patient medical condition, type of procedure, age of the patient, delayed treatment, economic status, uncertainty of diagnosis and patient request.¹² Even as several studies had been carried out to assess pain management in many countries of the world,¹³ there is paucity of data on the assessment of pain management in Nigeria especially among primary care physicians. This is surprising considering the fact that a substantial proportion of primary care appointments involve patients with pain complaints¹⁴ Prescriptions of analgesics therefore constitute a substantial proportion of prescriptions recorded in some studies.^{15,16}

We are not aware of any previously published study on the assessment of pain management among family medicine residents (primary care physicians) in Nigeria. This study was therefore designed to evaluate the pattern of pain management among family medicine residents in Nigeria.

METHODS

Setting and Design

This was a descriptive cross sectional survey conducted among family medicine residents that attended the update course organized by Faculty of Family Medicine of the National Postgraduate Medical College of Nigeria (NPMCN) Lagos which held at the University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria in July 2013. The course was attended by residents preparing for the different categories of Fellowship examination ranging from primaries, part I to part II examinations. The selection of this group of doctors was to ensure that the participants were actively practicing primary care physicians and from 36 states and federal capital territory of Nigeria.

Study Population

Inclusion criteria

1. Residents in family medicine who registered for the update course.
2. Residents residing in Nigeria

Exclusion criteria

1. Residents that refused to participate in the study.
2. Consultants family physicians and medical officers
3. Members of Nigerian Society for the Study of Pains.

Sample Size

The sample size needed to recruit a representative sample of the residents was calculated using the formula $N = z^2pq/d^2$. A prevalence (p) of 23.8%¹⁵ and a precision (d) of 5% were considered, where z statistic was 1.96 for a 95% confidence interval. The calculated sample size (N) of 279 was obtained. This was increased to 300 to give room for attrition.

Procedure

A list of residents (532) who paid for the update course by bank transfer was obtained from the faculty secretary one week before the program. Their serial numbers ranging from 001 to 532 were fed into computer software Stat Trek's Random Number Generator (<http://stattrek.com/statistics/random-number-generator.aspx>) to generate 300 random numbers. The residents whose numbers were among those generated were identified at the registration desk, addressed on the research and served with the specially designed questionnaire for the study. Verbal consent was obtained from them at this time.

Data Collection

The survey instrument was a pre-tested self administered structured questionnaire which was designed after literature reviews and discussions with family medicine residents on pain management. Those who on asking were identified as members of the Nigerian Society for the Study of Pains were excluded. No incentives were offered to participants. The survey instrument required approximately 15 minutes to complete. The first part sought information about the participants' background characteristics such as gender, years of practice, frequency of treatment of painful condition, The second part was designed to identify reasons for treatment of pains, factors influencing the choice of analgesics, analgesics of first choice and combination of analgesics.

Statistical Analysis

Data collected was entered into a personal computer and analysed using SPSS version 16. The results were presented as frequency tables, means and percentages using $p \leq 0.05$.

Ethical Approval

The approval of the Research and Ethics Committee of Niger Delta University Teaching Hospital, Okolobiri was sought and obtained before the commencement of the study.

RESULTS

Out of the 300 residents recruited, 250 (83.3%) participated in the survey. Their general characteristics of the residents are as shown in table 1. Their mean age was 34.3±7.5 years with a range of 25 to 50 years. Most of them were females (55.6%) practicing in public hospitals. They had been practicing after a basic medical qualification, for a mean of 5.8±4.3 years, with a range of one to 15 years. The mean number of years in residency training was 1.3±0.3 years with a range of three months to seven years. Only five (2.0%) of them had attended any form

of update training on pain management within the last year, prior to this survey.

The practice of pain relief among the residents is shown in table 2. The most common reason for the treatment of pain by the residents was enhancement of well being (211; 84.4%). Humanitarian reasons did not feature prominently (57; 22.8%). The major factor that guided the residents in their choice of analgesics includes severity of pain (150; 60.00%), potency (150 ; 60.00%) and cost (125; 50.00%). Hospital policy did not feature prominently as a factor (15; 6.0%). The drug most commonly prescribed were paracetamol (123; 49.20%) and non steroidal anti inflammatory drugs (NSAID) (76; 30.40%). Pethidine (8; 3.20%) and morphine (5; 2.0%) (opioids) were not commonly prescribed. Multimodal prescription of two or more drugs for pain was prescribed by 42 (16.80%). of the residents.

Table1. Socio-demographic characteristics of respondents

Variables	Number	Percentages
Age group (years)		
25-30	25-30	34.00
31-35	108	43.20
36-40	36-40	15.60
41-45	12	4.80
46-50	6	2.40
Gender		
Male	111	44.40
Female	139	55.60
Years in practice (years)		
0-5	215	86.00
5-10	21	8.40
10-15	14	5.60
Years in residency (years)		
0-1.0	99	39.60
>1 – 2	83	33.20
>2-3	54	21.60
>3-5	14	5.60
Ranks in training		
Registrars	230	92.00
Senior Registrars	20	8.00

Table2. Practice of pain relief among the residents.

Variables	Number	Percentages
Reasons for treatment of pains		
Prevention of chronicity	141	56.45
Humanitarian	57	22.80
Ethical	81	32.40
Enhancement of wellbeing	211	84.40
Factors influencing the choice of analgesics		
Availability	70	28.00
Severity of pain	150	60.00
Potency	150	60.00
Cost	125	50.00
Hospital policy	15	6.00

Knowledge of pharmacology	111	44.40
Prescribed analgesics by respondents		
Paracetamol	123	49.20
Non steroidal anti inflammatory		
drugs (NSAIDS)	76	30.40
Pentazocine	23	9.20
Tramadol	15	6.00
Pethidine	8	3.20
Morphine	5	2.00
Analgesic combinations		
Multimodal prescription	42	16.80
Unimodal prescription	208	83.20

DISCUSSION

Pain is among the most common reasons why patients seek medical attention.¹ In this study which was designed to evaluate analgesics usage in pain management among primary care physicians in Nigeria, demonstrated that analgesic use was suboptimal and was mainly used to enhance well-being.

Adequate pain management prevents establishment of chronic pain, promotes acute illness management, recovery and enhances quality of life.⁴ Some researchers have argued that pain treatment should be considered a basic human right,¹⁷ hence pain is the most cited anaesthetic cause of litigation in obstetric practice.¹⁸ Unfortunately humanitarian and ethical reasons were not at the forefront when considering reasons for the treatment of pain in this study. It is quite possible that this may be due to ignorance of the medico-legal implications of poor management of pain. Following the recent increase in medico-legal cases in Nigeria, it is very important for physicians to know that poorly treated pain may justify litigations.

In this study, the common factors that influence the choice of prescribed analgesics among the respondents include pain severity, potency of analgesic and cost of drug. The severity of pain has been documented as a known fact that influences the choice of analgesics. For example, paracetamol and NSAIDs are the most appropriate choices for the treatment of mild-to-moderate pain among patients lacking the contraindications for such drugs while opioids are powerful analgesics with significant side effects, which are commonly reserved for severe pain only.¹⁹ On event of analgesics failure, careful selection of a more potent analgesic regimen can be administered to prevent the stress and anxiety associated with breakthrough pain.²⁰

It is important to observe that the two most prescribed analgesics (paracetamol and non-steroidal anti-inflammatory drugs) are less potent analgesics and are for mild to moderate pain. Similar observation was made in studies conducted in Nigeria and Bangladesh where Paracetamol formed the largest percentage of analgesic prescribed in Hospitals^{12,21,22,23} In contrast however, a research carried out elsewhere revealed that an NSAID, which happens to be the second most prescribed drug according to this study, was the most prescribed drug.²⁴ Preference for paracetamol by the resident doctors could be due to its well-established safety, lack of significant drug interactions, few contraindications and multiple modes of administration such as oral and parenteral.²⁵ It is generally well tolerated, effective and inexpensive with virtually no adverse effects, except for those related to over dose.¹² Paracetamol is safe in pregnancy, and unlike NSAIDs does not affect the closure of the fetal ductus arteriosus.²⁶

Non-steroidal anti-inflammatory drugs (NSAIDs) took the second position. The reason is not farfetched. They provide excellent pain relief due to their anti-inflammatory and analgesic action. They are very useful in musculoskeletal problems, especially arthritis (rheumatoid arthritis, osteoarthritis, spondyloarthritis, ankylosing spondylitis), gout attacks, pain management in case of kidney stones and gallstones, treatment of acute migraines, posttraumatic pain, particularly when inflammation is also present and menstrual pain. These are common conditions found in primary care settings.

Although opioid analgesics are the gold standard for treating moderate to severe pain, particularly in cancer patients and in the acute setting such as trauma care, surgery, and treatment of burns, its use was not popular in this study. This corroborates with a study in

North-Eastern Portugal²⁷ and South Africa.²⁸ Despite their recognized effectiveness, opioids often are not freely available because of restrictive laws based on fear of misuse and abuse.²⁹ Several undesirable effects of opioids like respiratory depression, urinary retention, sedation, nausea and vomiting, constipation, analgesic tolerance, dependence and addiction hampers the prescription among doctors.^{30,31} Other possible reasons for reluctance to use opioids in healthcare include patient refusal, worry of masking injuries and complications such as compartment syndrome, fear of side effects and fear of dependence.²⁶ Opioids remain the agents of choice for severe pain; however, this class of analgesics is associated with dose-dependent adverse effects such as nausea, vomiting, ileus, sedation and respiratory depression. Also, it prolongs the time to readiness for discharge.^{32,33} The fact that 16.80% of the respondents practice multimodal analgesia is not commendable considering the current increased advocacy for multimodal analgesia.^{34,35} Multimodal analgesia represents an approach to preventing postoperative pain where the patient is administered a combination of opioid and non-opioid analgesic drugs that act at different sites within the central and peripheral nervous systems in an effort to minimize opioid use and, therefore, to decrease opioid-related side effects.³⁵ This low prescription rate of multimodal analgesia among the residents could have emanated from the fact that most of the residents are not exposed to severe pain management since they practice more in the outpatient clinics and have limited exposure to patients with severe pains. Multimodal analgesia provides superior dynamic pain relief with reduced analgesic-related side effects. It also may enhance recovery, reduce hospital stay, and facilitate early convalescence.³⁶

Strengths of this study included the voluntary nature of this survey with a response of a substantial number ($n > 250$) of subjects and the support of the organizers of the update course. We believe that the high number of participants and locations of their centre in different regions of the country makes the results representative of the Nigerian situation.

This study has some limitations. These include:

1. Paucity of validated study of this type in Nigeria with which to compare the result of this study.
2. The research instrument used was not subjected to reliability/validity testing.

3. The nature of the questionnaire limited respondents to answer 'yes' or 'no' only, without allowing sentence answers that would have enabled respondents to give reasons for their answers.
4. The study group comprised family physicians only, thus reducing the generalizability of our findings to other specialties.

Future surveys will be desirable, to integrate open-ended questions that will allow physicians to clarify the reasons for the answers they may choose. These surveys may also incorporate item enlargement that will aim at the influence of gender and ethnicity on pain care. Recognizing that increased education fosters greater knowledge, faculty of family medicine needs to critically review its curricula in the field of pain management.

CONCLUSION

The study demonstrated that the commonest factors influencing the choice of analgesic include severity of pain, potency of the drug and cost of drugs. The most commonly prescribed analgesics were paracetamol and NSAIDs. Opioids such as morphine and pethidine were not commonly prescribed. Multimodal analgesia was practiced by a minority of the residents.

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Evaluation of Analgesics Usage in Pain Management among Primary Care Physicians in Nigeria

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